PARALLEL WORLDS:

ATTRIBUTE-DEFINED REGIONS

IN GLOBAL HUMAN GEOGRAPHY

Of The Ford

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CONVENTIONALITY AND THE COUNTRY MODEL

A key function of geography is regionalization, the division of the world's surface into smaller pieces — *regions*[1] — so that we can better understand it. The most recognizable product of geography, and one of its fundamental tools, is the map of the world. While there are many possible maps of the world, in practice one map dominates: a conventional division of the world's land area, often rendered as pastel polygons in a field of blue ocean. By itself, in full form, this conventional map is used in education up through the collegiate level, and in visual aids for popular and academic articles on global subjects; but most of the other maps we see, virtually all of those above the city level, for parts of the world not our own, are simply excerpts from this same world map. A piece is selected that depicts the relevant part of the world; but the fundamental structure remains the same.

And this map is not simply an infographic. It is a framework, and a way of thinking. It is a ubiquitous cultural and intellectual paradigm that is used in fields far removed from geography. Geography can be an academic discipline, a backdrop for other academic disciplines, an academic subject, and a backdrop for other academic subjects, in order of the rigor that we might expect of the geography. As a social science, we might expect geography to be guided by the principles of empiricism; but even at its most rigorous, geography still partakes heavily of convention. The standard world map can illustrate an economics paper on comparative advantage, a history book on the Gulf War, and a newspaper article on infant mortality. It will even serve as the graphic of choice for much of academic geography. It can do all of these things because the system it depicts is taken to be the foundation on which such examinations naturally rest. We are taken to live in the world that exists on this map.

The basis of this conventional map is the country model: a world composed of discrete contiguous regions, *countries*[2], of approximately the same number and extent as the member-

1. The word 'region' is used here for technical purposes as the generic term for an areal unit or subdivision of the Earth's surface, in keeping with works on geographic thought. Equivalent terms, such as 'area', 'territory', 'space', and 'zone', would also have served. While a region might be presumed contiguous and without enclaves (and Ronald Johnston makes this explicit), that sense is not intended here. From this point forward, technical terms will be italicized and defined on introduction; all subsequent uses of the term will be carefully confined to the definition, with the exception of direct quotations, and references to the term itself. In the latter case, the term will be enclosed in single quotation marks. Appendix A summarizes technical terms.
2. 'Country' could itself have served as a generic term for a segment of the earth's surface, but popular and even scholarly usage suggests it as the obvious choice for the sense used here. As this study is among other

states of the United Nations. Of course, the units of the country model are also known as 'nations', as well, less generically, as 'nation-states', and slightly more accurately as 'states' and 'sovereign states'.

A given regionalization is a model, as Roger Minshull[3] points out; it is an oversimplification to facilitate our understanding of a complex phenomenon. In fact, it is the equivalent of a data classification, for which the classifications of remote sensing data provide a convenient illustration. The appropriate analogy Minshull offers is the division of the electromagnetic spectrum into bands — blue, yellow, red, infrared, ultraviolet. The phenomenon is continuous, and the boundaries are or may be arbitrary. For this reason, Richard Hartshorne correctly concludes that regions are seldom independently-existing units in themselves.[4]

But points within the regions, just as specific wavelengths in an electromagnetic band, are identifiably different. So the process of regionalization is justifiable, according to Minshull; but in the case of world regionalization, convenience generally leads to the use of the regions to hand, continents and, especially, countries. In his observation,

> There are many excellent books describing Europe or parts of Europe and all but one take the countries as their main units or 'regions'. … There are fewer descriptions of South America, but again the tendency is to take the countries as the main regions .... [p15]

One of the driving forces behind the country model is the legalism, respect for "law" however perceived or contrived, that grants to the UN and those organizations privileged to be its members legitimacy, often not questioned on account of policies, actions, or even practical questions of existence. A second driving force is the desire for standardization, to have some division of the world, however produced, to which reference can easily and usefully be made. Behind both of these forces is a third, conventionality, the simple acceptance of what has been accepted by others, a belief in what is commonly "known". These same three forces dictate that, if a country must be considered in part, the subdivisions of the country are those chosen by the recognized authority in the country, and

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things a rejection of the very idea of countries, the term, though it could otherwise be useful, should never be taken as an earnest example of country-oriented thought.

3. Distinguishing facts, such as a year of publication (or year and letter, if necessary) are only provided to clarify specific publications when more than one publication from an author has been cited in this study. Extended discussions of a single author's work are of a single publication unless clarified.

4. Hartshorne does allow that regions defined by fixed boundaries, such as farm plots, are independent units. Countries, to the extent that they exist at all, would therefore qualify.

if regions larger than countries are needed, these regions are always composed of whole countries and thus bounded by the same set of lines; and often these sets of countries are simply the membership of organizations which the country authorities have chosen to join. The country model is thus *hierarchical*, in a sense taken from Harm de Blij and Alec Murphy: regions at one scale compose the regions at the next scale up, and are themselves composed of the regions at the next scale down.

Because the notion of countries is a convention, it is difficult if not impossible to point to an origin or author; but it long predates the UN, and during the Cold War there were several countries in the common recognition that did not belong (Switzerland and the Koreas, for instance), and a few non-countries that did (Ukraine and Belorussia, for instance). Taiwan remains the greatest point of ambiguity. In general, though, the country model has increasingly aligned with UN membership, such that, if Taiwan is not considered a country, this is so through reference to its exclusion from the UN.

The power of the country model is reinforced by the imprimatur of officialdom. In perfectly-circular fashion, the members of the United Nations validate the UN itself, and it validates them, and the members all validate each other; the more official one seems, the more official they all seem. Why, exactly, the official is equated with the good and the proper is a matter for longer study. However the phenomenon originated, though, it seems to be influential.

The visual reinforcement is more influential still. There is an automatic assumption, as Alan MacEachren (2004) observes, that maps are accurate. And *this* map, the world map of countries, has a mesmerizing influence. In the words of Alec Murphy (2002):

> Over the course of the past century, most scholars and policy makers have viewed the world through the prism of the 'nation-state'. Maps showing the nation-states of the world provided the dominant frame of reference for foreign policy making, and scholarly attention has focused primarily on what those units have done — not what they are. [p193]

And in the words of Robert Jackson[5]:

> sovereign statehood ... is now so ingrained in the public life of humankind and imprinted in the minds of people that it seems like a natural phenomenon beyond the control of statesmen or anybody else. When schoolchildren are repeatedly shown a political map of the world which represents the particular locations of named states in different continents and oceans they can easily end up regarding

5. All references to Jackson alone are to his 1990 book, with one exception, which is marked.

> such entities in the same light as the physical features such as rivers or mountain ranges which sometimes delimit their international boundaries. [p7]

In theory, the countries are political entities, just as the members of the United Nations are purported to be. The first flaw of the country model is that the recognized countries are not identical to, and in much of the world not close to, the political realities of territorial control. The second and greater flaw of the country model is that even an accurate assessment of political control would not be a sound basis for analysis in other fields, except where political control is explicitly an influence, as in state language policy or customs régimes.

What is needed is a revision of our global geographic framework. We must develop a set of methods for the regionalization of the world worthy of inclusion in social science. To examine the country model is to examine a specific example of the conventional in geography. The alternative to the country model cannot be another convention. If indeed the standardized world is flawed, its replacement must have an empirical basis. A useful framework can only be built by using well-defined empirical methods to study the objective realities of the world. To take the cases explored in this study, political regionalization can be based on the objective criterion of territorial control, while linguistic regionalization can be based on the objective criterion of mutual intelligibility.

The various realms of geographic reality influence each other, and so must be considered together in the end, but it is crucial to determine the reality of each attribute of the landscape[6] on its own terms, and as geographers, to examine and present the spatial nature and extent of that attribute on its own terms. In doing so, we can reveal the patterns of interaction as they truly are, and come to reliable conclusions — precisely what the country model cannot provide us.

What we are given instead, by the country model and other conventional geographies, is a fallacy of spatial reasoning, *where* before *what*. The location and extent of each region is taken as given; either it lacks a definition entirely, or it has a definition no longer known to us. The geographical inquiry then explores the nature of humanity within that region, producing a set of attributes to describe it. Such a space was described by Stan Openshaw

6. Hartshorne's critique is taken; 'landscape' is used here only in a common, not technical, sense, and no reference is intended to the German geographers' 'Landschaft'.

and Peter Taylor as an '*a priori* region'[7]; though their work is often taken as an argument for standardization, it is in large part an argument against standardization *of the wrong sort*, in which a set of regions is used to study a problem for which it is completely unsuited. While enough arbitrary units of study across the world can produce meaningful data about spatial patterns, the units themselves remain arbitrary; and if the regions have been defined arbitrarily, or defined by an unrelated feature of the human landscape, the results of any inquiry are dependent on that definition, and constrained by it, whether this is recognized or not, and the correlations dependent on these units are therefore significantly less meaningful than they might be. We might suppose, from a state-level study in the United States, that there are no majority-black areas in the US, simply because there are no majority-black states; but the units disguise the data. To correct this shortcoming requires placing *what* before *where*. We must insist on a considered and relevant definition of all spaces used in analysis; each region must depend on an attribute used to define it. In other words, for each *where*, there must be a corresponding *what* that precedes it.

The empirical approach advocated here leads to multiple independent systems of regions. The regions are defined by the attributes revealed by specific inquiries into the human landscape; each inquiry is oriented around a specific field of concern, such as "What are the *dialects*[8] spoken in the world, and where are they?". These systems and regions are parallel — they exist alongside each other, while occupying the same space.[9] This is true in three related senses.

First, each individual inquiry into the characteristics of the human landscape produces a set of regions that is parallel to the set of regions resulting from each other inquiry, existing across the same universe exactly as separate map layers. The configuration of the linguistic regions in the world is different from, and independent of, the configuration of the religious

7. 'A priori' and 'a posteriori' have not been adopted here as technical terms so that their generic meanings might be preserved, and because disciplinary technical differences might lead to confusion in an interdisciplinary environment.

8. As will be explained in the chapter on linguistics, the term 'dialect' is used here in preference to 'language', whenever a specific variety of language is intended, whether conventionally termed a 'dialect', a 'language', or something else.

9. This is a sense taken directly from the concept of parallel universes, and is analogous to the usage for electrical circuitry. The expression 'parallel worlds' is perhaps an obvious formulation for the concept used in this study, and has presumably appeared independently on numerous occasions in and beyond geography. Terry Jordan-Bychkov and Mona Domosh, for example, use it as the title of a chapter contrasting folk and popular culture. Michio Kaku uses it for the title of his book exploring, among other things, parallel universes.

regions; though groups of individuals often share both dialect and religion, they need not and often do not.

Second, each region in each inquiry exists in parallel with the other regions in that same inquiry; the regions may be disconnected, they may be contiguous, or they may overlap where populations or influences intermingle; and they are often independent of each other in spatial extent. In language, for example, some land areas are not inhabited and are not a part of any linguistic region, while some areas are inhabited by speakers of more than one dialect and are thus part of overlapping regions; each linguistic region is independent of the others and the spatial relationships reflect this independence.

Third, the broader patterns of interaction that emerge across inquiries, and in particular the correlations or bundles of attributes that may align roughly with vernacular regions, exist in parallel, and simple adjacency is the least likely relationship among them. We can define *superregions* as regions with a core in which several attributes (a particular dialect, a particular religion, a particular historical government) are all significantly present, fading into a periphery in which at least one is present.[10] In other words, the intersection of several attribute-defined regions is the core of a superregion, and the union of those regions determines its periphery. So defined, superregions will occupy many of the same land areas, especially in their peripheries.

The two geographical frameworks at the center of this study can be compared thus:

country model	***parallel worlds***
conventional	empirical
standardized	variable
where before *what*	*what* before *where*

The nature of empiricism

In any discussion of empiricism and conventionality, or any close analysis of terminology and its uses and misuses, it should be expected that the point of reference and the ground rules are made clear. In this case, two distinctions are needed. The first is the distinction between science and art. Scholarship requires both, and it requires that the position between

10. Donald Meinig uses a complex historical reading to define a Mormon cultural region with a core, a domain, and a sphere; the process is quite different from the multiple-attribute approach suggested here. In extent, the core and periphery here correspond roughly to his domain and sphere. Meinig's core is a very small area with a combination of high population concentration and high cultural significance, partially a nodal definition and partially a vernacular definition.

the two be always apparent, often explicit. *Science* is concerned with what is knowable and provable; it may at best be an aspiration, as a strict epistemology would perhaps limit our absolute knowledge to just a few subjects, none of them dealing directly with the physical world we inhabit.[11] Nonetheless, if we adhere to the scientific method, and do not (at the least) disregard the evidence of our senses, we can establish many things *as well as possible*. *Art*, in this context, is the movement towards understanding based on experience and intuition — perfectly compatible with science, provided that evidence is never disregarded. As an example, measuring wavelengths of electromagnetic radiation is a science. Dividing the spectrum into bands is an art, drawing from the investigator's belief, however well founded, that one possible division will be more useful to our ultimate understanding of radiation than any other, or at least any other under consideration. Data are often classified by art. The judgement in question is not about what is true or not true, in accordance with the evidence or not in accordance. It is about what provides us with the "best" route to understanding, though again the valuation is not empty subjectivity, but the result of experience and familiarity with the subject matter. It can always be disputed by another with different experience; it should, however, be provisionally accepted as potentially useful until proven false, while its usefulness will be tested over time, and judged by the marketplace of ideas.

Subjectivity is also confusingly brought into another distinction. *Qualitative* research is taken in this study to apply to the *scientific* study of categories, absolutes, through logic, and can be applied to concepts but also to the material world, wherever we can effectively place things into definitive categories — one of the exciting challenges of qualitative study (and where it is most likely to fail). *Quantitative* study has a place as well — wherever we *cannot* effectively place things into definitive categories, and where comparisons of degree or quantity are our only resort. Subjectivity has its place; but not in the academy.

The use of 'qualitative' to apply to research that is focused on the subjective feelings of individuals, based heavily on interviews and anecdotes, is not in keeping with the original scholarly distinction. But it may be what many have in mind when they advocate 'qualitative research'. This is acceptable, provided an objective interpretation of those subjectivities.

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11. Logic and its subfield of mathematics are indisputably scientific. Studies of the physical world depend on materialist assumptions. But certainly our perceptions of the world are real as things-in-themselves; and we (following René Descartes) as perceivers are knowable as well.

Research that is simply subjective, on the other hand, is not acceptable. And 'qualitative' as used in this study is far removed from either such meaning.

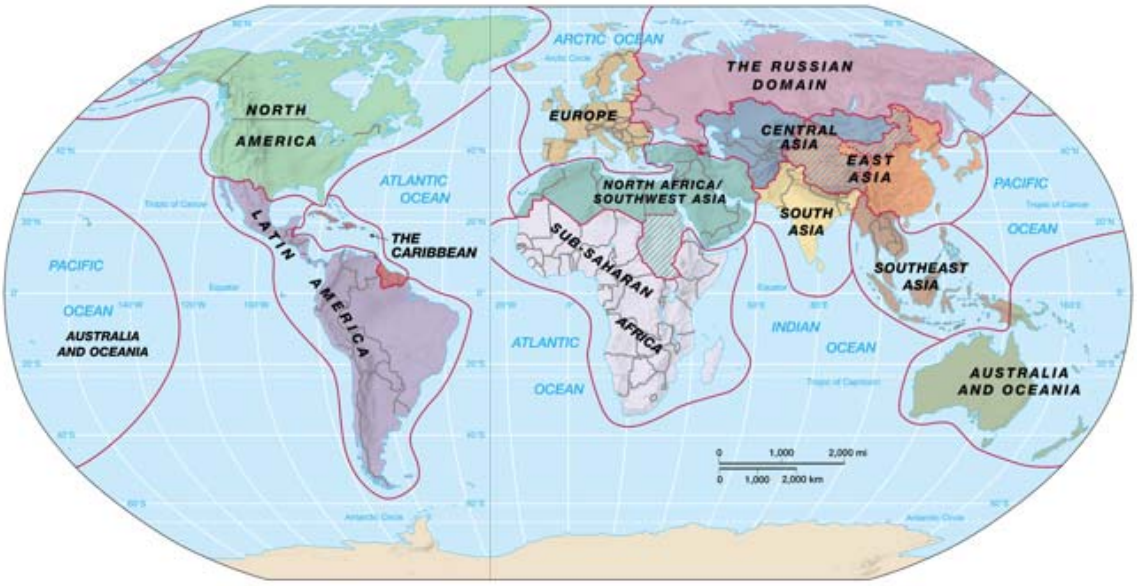
The country model in practice

The country model forms what Martin Lewis and Kären Wigen (1997) refer to as a metageography, a conventional, unquestioned geographical structure underlying our thought about the world. They illustrate this using the example of continents. The general response of James Blaut (1999) to this is correct: Lewis and Wigen are attacking an easy target, and are not contributing as much as they imply to the scholarly understanding of the world, which may already recognize the problem with the general idea, the conventional divisions, and the Eurocentrism underneath all. But viewed instead as an argument meant for the public debate, in which no critique has proven devastating but where repeated stress may be helpful, Lewis and Wigen are potentially accomplishing more. The notion of continents and the Eurocentric worldview may have few academic defenders, but they do affect the conventional way of thinking. The questions regarding the country model can be considered in the same way.

The territorial trap that John Agnew (1994) describes is in part a critique of territoriality itself; but the key feature of the territorial trap is the view of state borders as containers of society. This is the country model: that all human activity is organized within a set of recognized borders, and the human groups so contained are the agents of global interaction. To what extent does anyone really fall into this trap?

Les Rowntree, Martin Lewis, Marie Price, and William Wyckoff, in a textbook structured around the concept of world regions, divide these regions almost entirely by country borders. One country and select parts of a second country are included in more than one region; specifically, Sudan is included in Sub-Saharan Africa as well as Southwest Asia and North Africa, and parts of the People's Republic of China are included in Central Asia for most purposes, and East Asia for political purposes. But those parts are also chosen according to political or theoretically-political boundaries — one province and three so-called autonomous regions of the People's Republic. And an extensive series of maps included in each of the regional chapters, showing language, religion, crops, climate, population density, and the like, are standardized; that is, each chapter presents the same series of thematic

maps, with the same symbols. The principles described by Edward Tufte for "small multiples" apply, and the maps ought to be quite useful, but each is cropped precisely to these regional, hence country, boundaries, making it impossible to follow patterns across regional and country lines, without paging to a different chapter and mentally making the connections.[12] Lewis is a consistent advocate of a world-regional system; but working with Kären Wigen (1997) he carefully drew regional boundaries across country lines. Here, with the two exceptions, a country is entirely in a region, or not at all.



The world-regional map from Rowntree, Lewis, Price, and Wyckoff.

Similarly, the forty-two undergraduate African geography texts analyzed by Roy Cole show a strong inclination to regionalize[13] Africa by countries, an inclination that Cole identifies as seriously problematic. Of the seven that present only tropical Africa, five use country boundaries alone and one uses country boundaries primarily to delineate tropical Africa, while the last is not depicted. Of the seven that present only sub-Saharan Africa, six use country boundaries alone to delineate sub-Saharan Africa, while the last is not depicted.

12. The country model is in full evidence with the maps. Originally all of Cyprus was included in Southwest Asia and North Africa. With the accession, between editions, of the (Greek) Cypriot Republic to the European Union, all of Cyprus is now included, theoretically, in Europe. Few of the maps have been updated, though, so Cyprus still appears to be in Southwest Asia and North Africa.

13. Cole places regionalization, which he describes much as in this study, within Hartshorne's regional geography, and furthermore contrasts "regional" geography in Africa, which regionalizes Africa, from "systematic" geography in Africa, which considers it as a whole. But to Hartshorne, regional geography is the description of phenomena within regions once regions have been established. Regionalization is an element of Hartshorne's systematic geography, which is a methodological, not a scalar, distinction.

Of the twenty-eight that regionalize Africa, whether defined as continental, tropical, or sub-Saharan Africa, only two disregard country boundaries. Three more (two of them by the same lead author) deviate from country boundaries only in one isolated place, and a further three use country boundaries to delineate regions but depict a single additional boundary across their own regional lines as supplemental information. All of the others use country boundaries exclusively to regionalize.

An important global linguistic resource, 'Ethnologue' (Raymond Gordon, ed.), the principal subject of the linguistic element in this study, goes far beyond organizing its entries by country. Frequently it lists two varieties of speech as different languages based solely on the fact that they are spoken in different countries. A similar effect exists in the linguistic atlas of R.E. Asher and Christopher Moseley, where there are many examples, such as in Europe and Arabia, of country boundaries coinciding with supposed linguistic boundaries. This is a clear example of countries viewed as containers of society.

Samuel Huntington's influential and controversial thesis on the potential clash of civilizations makes significant use of countries when determining civilizational identity. While Huntington does allow that a country may exist as a border region between two civilizations, each country (Turkey, for example) is viewed as an element to be analyzed in itself. A country is either in one civilization, in another civilization, or on the border between them. He does not openly entertain the idea that one part of a country may belong unequivocally to one civilization, while another part belongs to another civilization.

Presumably Nobel laureate Paul Krugman and colleague Maurice Obstfeld understand clearly that customs unions and currency unions undermine the country model in international economics, and that these two intergovernmental arrangements are among the simpler ways in which a country is not the same thing as a unified economy or a self-standing module of the world economy. They make little effort to clarify this in their text on the subject, though. They make frequent use of the terms 'country' and 'nation', and ascribe the peculiarities of international economics to the differences between "sovereign states". Concepts such as comparative advantage and economies of scale are said to apply to countries, and countries alone, when in fact they can apply to any regions we might choose to examine. Exchange-rate issues are also said to affect countries; while it is occasionally emphasized that that the relationship can be many countries to one currency, they never acknowledge that the relationship can be one country to many currencies.

Brandon McElroy, Bruce Wilkinson, and Edward Rothman take an interesting approach and go to some trouble to compare, mathematically, the regionalization of the world based on geology, hydrology, and politics. Their original definition of political regions is based on control, it would seem: "nations are distinguished by those governmental bodies that rule within them" [p197], and most or all of their arguments assume control. Using this, they correctly identify connections among the three, such as the barriers to expanded control provided by ridges and rivers. But the data set employed is simply the membership of the United Nations. Even the relatively-stable region used for their sole map, South America, depicts two countries (Colombia and Perú) as single regions, when they are in fact multiple regions based on the arguments employed; and the Putumayo river between them is singled out in the text as a good example of rivers dividing political control, as though the Bogotá- and Lima-controlled territories meet at that river. And even in the country system, changes are, grudgingly, acknowledged; the stability of geological zones and drainage basins compared with UN membership make the overall thesis of a connection among them all obviously suspect.[14]

Alberto Alesina, Enrico Spolaore, and Romain Wacziarg similarly go to great lengths to derive a mathematical model for the existence of states. An earlier study by Alesina and Spolaore (1997) lays the groundwork for this study, but remains in the abstract.[15] Its discussion suggests a focus on the empirical state, and though knowledgeable individuals might critique its merits as economics, and the study takes a large number of unwarranted liberties in simplifying political reality, there is no way of knowing whether the authors are dealing with political reality, as no empirical examples are introduced. But as they move on, with Wacziarg, to real-world data, they answer the question in the first sentence. While they maintain arguments that only apply to empirical states, they satisfy themselves with country-model data. ("The number of countries in the world increased from 74 in 1946 to 192 in 1995." [p1276] The figure was, in 1995, seven more than the membership of the UN, presumably Switzerland, the Vatican, and five Pacific island states. Alesina again makes blithe use of this count, writing with Robert J. Barro, in a study of currency unions; the

14. The uncritical acceptance of UN membership as political control is the most important, but not the only, unsupportable assumption in their study.

15. A similar study by David Friedman considered entities focused on collecting taxes (and capable of making war to support this faculty); but Friedman does not tip his hand as to modern-day countries. His stated reliance on historical atlases is mitigated at several points by a deliberate decision to group or unbundle "states" into tax-collecting "*t*-nations". His few examples seem empirical, but the remaining data may not be.

number has increased by one, presumably East Timor.) Given the ready acceptance of conventional data, it is perhaps not surprising that the model claims and demonstrates no predictive power.

Immanuel Wallerstein, a scholar known for taking a global view, refers at one point to "France, Great Britain, the United States, and the various parts of what would later become Germany and Italy". [p5] He means, naturally, various parts of what would later be unified politically and subsequently called "Germany" and "Italy".[16] Harvey Starr produces what could be a useful quantitative analysis of borders, but employs a database containing only recognized borders; as the recognized borders do not reflect objective reality, the analysis could not lead to accurate results. John O'Loughlin and Luc Anselin study the formation of large, informal trading networks, and as is typical of trade studies, the units in the data are countries. The writing study of Nakanishi Akira, while primarily organized by script, uses countries as its auxiliary organizing feature, so that the only geographic information is country information. William Wood, the US government's chief geographer, might be expected to hold a viewpoint conducive to countries, and to his credit he does recognize a world of frequently-unstable political borders, but his view of the associations — cultural, economic, symbolic — is not just a recognition of the country model, but an expression of it. While the Correlates of War Project explicitly documents and depends on the "state system", the implication of many of its data sets is that they deal with reality, while the state system generally differs from reality significantly. And though it has passed in his usage from a metageography to an ideology, the country model is ever-present when Gidon Gottlieb argues against breaking up states by suggesting an alternative framework to accommodate stateless nations, a kind of consolation prize; he exemplifies, with whatever air of sad resignation, what Michael Lind refers to as a "stabilitarian".

Of eighteen world atlases[17] available for analysis at Borders in downtown Indianapolis, all are heavily influenced by the country model.[18] All use countries as their primary

16. 'GERMANIA' and 'ITALIA' are ancient words, and 'Deutschland' is attested long before the political unification. Were this not the case, there could have been no controversy as to whether unification should take place within Großdeutschland, including Austria, or Kleindeutschland, excluding it. Tangentially, this also indicates that Austria, as well as "the various parts of what would later become Germany", was viewed as German — which, naturally, it is.

17. The eighteen comprise eight from Hammond (Hammond World Atlas Corporation), four from National Geographic (Carl Mehler, ed., and Allen Carroll, et al.), two from Oxford (Keith Lye et al., and Philip's), two from Rand McNally (Rand McNally, and Brett Grover and Anne Ford, eds.), one from Collins (Collins

regionalization, appearing prominently on all base maps. All use the multi-pastel polygon paradigm to depict countries. For many of the atlases, this is used on the base maps; those that color their base maps instead by relief nonetheless prominently mark the countries with their recognized borders. This suggests that countries are not only the appropriate and standard regionalization, but also the most important or next most important feature of the landscape. While the term 'states' is seldom employed ('nations' is occasionally used but the usual term is of course 'countries'), the countries are presented, usually explicitly, as political divisions, and political realities. Several of the atlases claim to favor de facto borders, but even they, and most of the others, admit to being guided by official sources, primarily the US government and the United Nations. For this reason, even on the easier cases (Taiwan, Cyprus, Israel, Somaliland, the Western Sahara), the atlases generally favor recognition over reality. Less-noticed cases (Abkhazia, South Ossetia, Transdniestria) are usually ignored, and cases further out (Somalia, the Congo) are completely ignored. Even on the question of names, the country model shows its influence: Oxford claims to employ local names, but the "local" names in northern Cyprus are in Greek, and the "local" names in Iraqi Kurdistan are in Arabic.

The most significant deviation from the country model is taken by National Geographic, which consistently depicts a number of disputed territories as qualitatively different from their respective countries, on at least some maps, by shading the area in grey, rather than the country's assigned pastel. The Western Sahara is colored as Morocco, though not as an integral part. But the unrecognized state most likely to be included on others' lists of countries, Taiwan, is consistently depicted by National Geographic, not as disputed, but as a part of China unambiguously. The adherence to the country model in this case must, quite simply, be presumed to be in preservation of access to the Chinese market.

The emphasis on countries in world atlases may be nothing more than a commercial decision to give customers what they want and are expecting, but the reinforcement it provides — these are reputable reference works — only perpetuates the country model in the public's understanding. Similarly, when news organizations use a country map to illustrate their stories, they are perhaps bowing to a necessity: a country map might be the only point

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Bartholomew), and one from Dorling Kindersley (Jonathan Metcalf, David Roberts, Simon Mumford, Debra Wolter, et al.).

18. The Barnes and Noble bookstore on the campus of Indiana University – Purdue University Indianapolis sells no world atlases at all; but that is a failure of a different sort.

of reference that their readers or viewers have. But the news organizations are, at the same time, the authoritative voices that the public looks to on complicated and controversial matters, and if countries are so uncontroversial that they can serve as the unremarked *background* for the affairs of the world, the public is unlikely to put much additional thought into them.

Departures from the country model

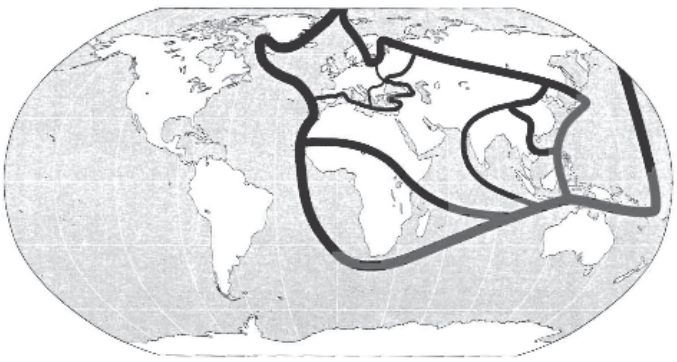
There are some interesting deviations, each of which offers insight into a better, empirical method for regionalization. Joel Garreau can be credited with significant innovation by (mostly) ignoring political boundaries and dividing North America into nine "nations", spatially-contiguous areas organized around commonalities.

Some obvious critiques can be made: Québec, the administrative unit, is set aside as its own nation, including the northern (non-Francophone) aboriginal areas but excluding adjacent French-speaking Acadie, which Garreau himself seems hard-pressed to justify based on his original premise. The other eight nations are located at least partially in the United States,

but only one of them (Dixie) completely, and yet Garreau designates a US city as the capital of each of them. And of course it is possible to engage in endless arguments about the specifics, such as whether there should be more or fewer nations, and which areas should fall within each.

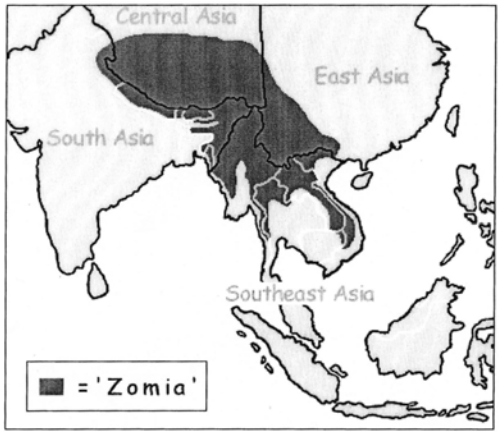
But a more important issue is that, while Garreau admirably discards the conventional boundaries, he does not abandon boundaries of the conventional sort. While, in fairness, he often seems to view areas along his borders as belonging somewhat to the nations on either side, his nations still fit together like the countries of modern imagination, which is why he has called them 'nations' in the first place. If he were to use instead a more flexible approach, the overlap of nations would not be confined to narrow frontier regions. For example, the Foundry is defined by urban manufacturing centers, and the Breadbasket by grain farming. Much of the land south of the Great Lakes is used for grain farming, while the cities spread throughout this farm belt are typical of the Foundry, which is where most of the area is assigned. But by Garreau's original logic, the two land-use types and their inhabitants, though intermingled, are culturally distinct and belong to different nations — albeit nations whose homelands have thousands of square kilometers in common. Similarly, if MexAmerica and Québec are defined linguistically, as seems to be the case at heart, then these nations can bleed into the Empty Quarter or the Foundry, as Spanish does into the area of resource extraction and ranching, and French does into the area of urban manufacturing.

While Lewis and Wigen (1997) argue uncontroversially for world regions to replace the continental view, and propose an uncontroversial division of the world into regions, they propose a scheme of borders of varying thickness between cultural areas, where areas with greater affinity are separated by thinner borders, an effective point visually as well as conceptually.



They also insist on locating regions across political lines; though their promised critique of the nation-state obsession never fully materializes.[19] And they skirt, but never land on, the usefulness of ad hoc regionalization. Finally, while their scheme contains novelty, such as Afro-America, it also regionalizes according to conventionality and mere spatial proximity, as with Southeast Asia. In addition to the novel border concept, and whatever value derives from the public case against their particular conventional metageography, their work is primarily useful as a review of ideas, particularly a decent history of the conceptualization of regions in the world.

Willem van Schendel, making a point about the intransigence of established world regions and their defense by area-studies barons (whose territoriality he compares aptly to the Scramble for Africa), proposes a new world region, Zomia, which he defines as the region of Tibeto-Burman mountain dwellers.



As his map shows, not only is he challenging the conventional regions of Central Asia, South Asia, East Asia, and Southeast Asia, which are all divided at country borders, but he pointedly draws his lines across country boundaries within the regions as well.

Kenichi Ohmae describes and to some extent advocates "region states", natural economic regions of five to twenty million individuals, whether within or across political lines, where economies of scale exist on the consumption side; in short, he is talking about markets, and describing what geographers would recognize as a functional region. While he includes many unjustifiable statements on their characteristics (for example, that they are primarily linked to the global economy, not the state economy, and that they are inherently

19. They do, however, go far enough to prompt James Blaut to remark, twice (1999, 2000), that their critique of the nation-state paradigm would not be popular with the UN General Assembly — as though this were a devastating point, instead of an irrelevance.

focused on economic issues, rather than cultural or political, as though monolithic, and in defiance of evidence), he does argue strongly against the continuation of the nation-state and its hard borders, both as fact and as aspiration.

Using media markets, specifically the areas of dominant influence (ADIs) identified by the rating company Arbitron, as his fundamental units, Michael Weiss has educed geographical patterns in the United States, in addition to classifying the ADIs themselves according to broad demographics. The use of media markets, rather than census geographies, zip codes, or administrative divisions, is itself a break from conventional geography. Furthermore, the variable results produced, as Weiss subjects the markets to inquiry after inquiry, suggests that some vernacular regions, particularly the South, are fairly cohesive, but is also a reminder that cohesion is not something that should be forced on the data. The patterns exhibited above the unit level are in fact somewhat different for each inquiry. Weiss allows the empirical situation to reveal itself.

The country model as data model

Three possible defenses of the country model stand out, particularly in academic research settings. First, country-level statistics are often the only available statistics. Second, because the model is ubiquitous and the world is consistently and completely divided into countries, the model gives us our closest possible approach to universality. Third, the standardization the country model represents is an opportunity to avoid the modifiable areal unit problem described by Openshaw and Taylor.

But if the countries are not an accurate representation of reality, the statistics themselves cannot be accurate. In particular, there is a dramatic divergence in large parts of the world between the borders of the countries, and the territories controlled by their supposed governments.[20] Government-supplied statistics in these cases are bound to be ambiguous; the governments are not likely to admit to a lack of control, and so are unlikely to acknowledge that the statistics provided extend only to a part of the recognized territory. It may well be impossible for the recognized government or even independent agencies to gather data in the excluded areas. (And this presumes that governments are able to provide statistics for all areas that appear to be under their control, which is surely not always true.)

20. This is considered in greater detail later.

If so, statistics might include estimates in compensation, or an assumption of uniformity, or extrapolated (or worse, not extrapolated) historical data; or they might simply present data for a part as data for the whole. In cases where independent statistics are used instead, there is still often ambiguity about the extent of the unit for which statistics are being reported — the recognized area, or the area controlled by the government. Independent researchers may be just as unable to gather data in areas of unrecognized control.[21] And again, there might be ambiguity about the genuine independence of these data from government statistics.

If the statistics-gathering areas do not match the territorial completeness of the countries, then we have not in fact achieved universality; and unless the statistical areas are themselves consistent, then we have not avoided the modifiable areal unit problem. It is important to note that, as discussed earlier, Openshaw and Taylor were not primarily concerned with the dangers of unstandardized areas, but rather with *arbitrary* areas (in their term, '*a priori* regions'), which the countries almost always are. In any case, using the countries as our statistical base may avoid the change in extent of areas from one analysis to the next (the usual interpretation of the modifiable areal unit problem) within a specific time span, but the countries, despite their permanence in the public imagination and nationalist rhetoric, do change with some frequency — a fact overlooked, apparently, by Alesina, Spolaore, and Wacziarg. Any recent global studies at ten-year or even five-year intervals would have faced the problem, even in the parts of the world where government control matches recognized borders.

As Tufte considers this problem, he advocates a redivision of the world into a fine mesh of square units, offering a practical example from, unsurprisingly, Japan.

> Conventional blot maps (choropleth maps, in the jargon) paint over areas formed by the *given* geographic or political boundaries. The consequences are (1) sizes of areas are non-uniform, (2) colored-in areas are proportional to (often nearly empty) land areas instead of the activities depicted, with large unpopulated areas often receiving greatest visual emphasis, and (3) historical changes in political boundaries disrupt continuity of statistical comparisons. Mesh maps finesse these problems. … Arbitrary but statistically wise boundaries now cradle the micro-data. [p40-1]

We can immediately disregard his second point, which is an argument for choropleth normalization or cartograms, but is not addressed in any way by the mesh map; a large

21. A better solution is suggested by Dan Blumberg and David Jacobson. Remotely-sensed data, where they can be applied, show no respect for country boundaries, and have the potential to be both complete and objective, in pronounced contrast to government statistics.

empty area remains large and empty. His first and third points are certainly addressed by the mesh map, assuming the given boundaries enclose unnecessarily-large areas and provided that all historical data are resampled — perhaps not likely, given how much effort he claims went into his example. And indeed, if confidentiality or technical limitations (resolution, data storage) prevent the use or display of the underlying "micro-data", then perhaps something uniform like a grid would have some limited value. Resampling, however, always distorts the original data; wherever the original boundaries intersect the new boundaries an assumption must be made, and information lost. The same would not hold for point data, but in the case of point data *or* areal data, the proper aggregation would be an attribute-defined aggregation, allowing the data to guide their own units; if uniformity is not realistic, then some mathematical threshold can be applied. If at that point a comparison is still needed, it can be done with map algebra or a resampling ad hoc, to whatever unit seems most appropriate for the comparison. But in any case, none of these solutions is preferable to the retention, wherever possible, of the original data, so that they can be used repeatedly without the repeated introduction of new error.

The use of a raster is certainly in the direction of a field model, which seems appropriate for certain data. However, this is not an option for data storage, merely for display, and is employed to convey the belief (whether justified or not) on the part of the author that the data are continuous and that a discrete presentation would be misleading. This is surely often true. But a field presentation is misleading as well; given the suggestive power of the map (referring back to MacEachren (2004), Denis Wood, Mark Monmonier, and countless others), interpolations will be taken as hard facts. Something semi-discrete, such as a triangulated irregular network, or even something straightforward, such as a point illustration with a text description of the author's interpretation of the data, will avoid this pitfall and also preserve the original data for other interpretations.

REGIONAL CONCEPTS

Scholars, including geographers, often make the mistake of proceeding from *where* to *what* — that is, we attempt to understand and explain the situation as it exists in a region whose extent is taken as given. If we instead proceed from *what* to *where*, if we use the realities of the world as we discover them to delineate space, we will be more accurate in our answers to both questions. In particular, as geographers we must remember that we cannot say anything about spatial patterns unless we can clearly define what it is that we are seeking. Put another way, until we identify what we are looking for and what we are looking at, we will not be able to identify where it is.

For any given *point* on the surface of the planet, there are numerous phenomena that intersect with that point, and studying those phenomena says something meaningful about the point. But the introduction of spatial extent requires a preceding phenomenon. A location of any spatial extent is meaningful only if it is defined by a real-world phenomenon. Once so defined, it may be useful to examine that region for other phenomena. But examining a region whose spatial extent is arbitrary or conventional is not meaningful; it is misleading. When dealing with extensive locations, every *where* must be preceded by a corresponding *what* that defines it.

And though there are numerous ways to think of space, any empirical regions of the human landscape must begin with a carefully-defined attribute of that human landscape. The relationship between human regions is dependent on the relationship between the attributes that define them, just as the circles on a Venn diagram manifest the logical relationship between the variables under consideration. Embedded attributes define embedded regions. Correlated attributes define correlated regions. Mutually-exclusive attributes naturally define mutually-exclusive regions. And importantly, each attribute defines a different region; we can never assume the nature of the map, but must produce it ad hoc depending entirely on what facet or facets of the human landscape we are concerning ourselves with. Within human geography, Louis Wirth accurately outlines our goal:

> To define the areas on the earth's crust where certain kinds of human beings live in a certain degree of density, making their living through particular sets of activities, building particular kinds of structures, following particular kinds of customs, pursuing certain interests, meeting specific problems and seeking to solve them in

specific ways, is a legitimate and necessary task which properly engages the scholarly labor of many persons throughout the world. [p387]

Competing spatial foundations

Some expressions can seem so true that it may be difficult to convince ourselves that they are not. An example is 'lowest common denominator'. This mathematical term has been borrowed into common language because of what it seems to suggest, lowness; but it is a poor representation of the actual concept. When the speaker says that an element of a set has been reduced to the "lowest common denominator", he in fact means that it has been reduced to the *largest* element which each member possesses in common — to use the correct mathematical analogy, the greatest common factor. What makes a greatest common factor so low is the requirement that it be in *common*. The layperson invoking the "race to the bottom" knows that the bottom is not zero. For example, in a free-trade negotiation between two states, one of them will often have weaker environmental protections or labor laws. While it may be politically useful to insinuate that the result of the negotiations will be a free trade area with *no* environmental protections or labor laws, the actual worst-case scenario is that environmental protections and labor laws will be harmonized to match those of the state with the weaker laws; that is, the result will be the *best* protections that both states have in common, the *greatest* common factor.[22]

The same holds with the distinction between "trait geographies" and "process geographies". This distinction is made by the Globalization Project[23] in an oft-cited white paper which aims to move academics, and area studies in particular, away from "trait geographies", in which thinking is

> driven by conceptions of geographical, civilizational and cultural coherence which rely on some sort of trait list — of values, of languages, of material practices, of ecological adaptations, of marriage patterns and the like. [p1]

22. It is true that, in the case of trade, a different process might follow, in which manufacturers free to move goods across the border choose to locate their plants in the state with the weaker protections and each state then competes to have the weaker protections, an actual race to the bottom. This does genuinely happen, as in the case of taxation, especially corporate tax rates. But the process of bidding protections down follows only if the protections are the subject of competition between rivals, rather than negotiation between partners as with free trade areas; and in any case, it has nothing to do with the 'lowest common denominator'.
23. The quotation is repeated, almost verbatim, by the Globalization Project's lead author Arjun Appadurai in 2000, and is often cited as such. Other quotes from the Project are similarly repeated by Appadurai.

The authors view this as tending towards fixed areas, and, parenthetically, as largely a product of US Cold War sentiment. They instead propose "process geographies", which they believe will produce more dynamic areas.

Though the distinction has been embraced by geographers — invariably on the side of process geographies — it originated in the consideration of area studies, which may explain why it apparently repeats the debate in geography between formal and functional regions. Nonetheless, if geographers want to influence area studies, and they should, they need to engage with area scholars. Whatever persistent world regions geographers propose should be created or identified at least in part with area studies in mind, and geographers should advocate that the two systems coincide. The Globalization Project likely agrees, and has taken the task in its own hands by urging the academy to move away from trait geographies.

But the authors never explain what is wrong, exactly, with conceptions that rely on a trait list, or why (largely) static areas are somehow not consistent with reality. The weakness of trait geographies, as the authors vaguely seem to recognize, is that the idea was applied badly, and once, and became entrenched. If trait geographies, exactly as the authors describe, were used as the foundation of our division of the world into territories for consideration, the regions produced would be exactly as dynamic as the world really is. People do change, and they do move; but they don't change or move that much. Trait-defined regions shift across the surface of the world; but typically at a glacial pace, with only the occasional cataclysmic displacement.

Process geographies, on the other hand, are not necessarily dynamic. The processes themselves are certainly dynamic, but the geographies of those processes can remain static. The Nile, for example, has been flowing through the same area for all of recorded history. Many of the human processes in question are likewise dependent, like the Nile, on channels in the contours of the landscape, including even the physical landscape. Trade must flow over roads, but also through mountain passes, across seas, and up and down rivers.

According to the Globalization Project, "the Pacific Rim is certainly a better way of thinking about a certain region today, than splitting up East Asia and the Western coast of North America" [p3]. The certainty the authors feel about this is curious, particularly as they suggest that splitting East Asia from the North American West Coast is more problematic than dividing either of them from inland territories. Is Los Angeles "certainly" more connected to Shanghai than it is to New Mexico, or even New York? Is Shanghai more

connected to Los Angeles than it is to Sichuan? No; the Pacific Rim is an interesting idea (though, to be sure, an idea with a completely-static geography) that gives us the potential for different insights and affinities. But Los Angeles is a long way from Shanghai, physically and culturally, and Appadurai and his colleagues can only be swept up in their own hyperbole to say otherwise. The obvious conclusion is that the features of the human landscape that proponents of process geographies classify as traits — language, religion, customs — are the more important determinants of the human environment, of the spaces that we inhabit. Our identities, our beliefs, even our ability to communicate: these are not incidentals, random superficial features of our lives, but the central elements of our lives.

Van Schendel provides an excellent example of the embrace of trait geographies and the simultaneous rejection of 'trait geographies'. He endorses the Globalization Project distinction. But his paper has as its central feature the idea of Zomia, the region of Tibeto-Burman mountain dwellers. While his overall point might accord with the area studies reformers of the Project, he has, in Zomia, illustrated the trait geography, how it can be used and why it is useful. He has provided two traits and defined a region as their intersection. One of those traits, mountain dwelling, could hardly be less suited to process geography. It clearly defines a static region; the mountains are going nowhere.

And even the Tibeto-Burman speakers are fairly static. The nomadic life is all but gone from our planet. Modern transport may be opening up our mobility, but most humans still come home at the end of the day. They have a fixed abode. And the cultures that are composed of these individual humans are largely fixed in place as well, not moving significantly over decades, often over centuries.

Lewis and Wigen endorse (2000) the Project's goal; they note (1999) that this means moving

> away from static "trait geographies" (in which East Asia was defined as the land of ideographic writing, Confucianism, chopsticks, and the like) toward "process geographies," in which regions could be conceptualized as both dynamic and interconnected. [p165]

If we are to rely on processes, though, by which process would we define East Asia, a region that appears on Lewis and Wigen's own map (1997)? It is worth noting that Lewis co-authored a textbook (Rowntree, Lewis, Price, and Wyckoff) that is positively full of trait geographies. An example: the entirety of East Asia "shares certain historically rooted ways

of life and systems of ideas" [p332], and among the items cited are ideographic writing and Confucianism — not chopsticks, perhaps, but they could certainly be inferred.

Sita Ranchod-Nilsson states that "trait geographies grew out of a combination of colonial cartographies, European notions of civilization and cold war security frameworks."[24] [p6] This may be true for some trait geographies, but it is clearly not true for the concept of trait geographies as a whole. If Ranchod-Nilsson then means that the dominant trait geographies had such an origin, she is bound to say what those dominant trait geographies are, so that we might judge for ourselves whether they did indeed arise in this fashion. Further, not everything about colonial cartographies, European notions of civilization, or cold war security frameworks is necessarily wrong, simply because modified by 'colonial', 'European', and 'cold war'. Did colonial and cold-war cartographers not have some interest in accurate representation, if only to effectively promote their ideologies, however objectionable Ranchod-Nilsson may find those to be? Have the Europeans not ascertained *anything* true about civilizations?[25]

After quoting the Project's definition of trait geographies, again without critiquing the notion, Ranchod-Nilsson proceeds to state:

> The geographical coherence of many areas is certainly questionable as many of the states, territories, and regions recognized in contemporary contexts were products of the colonial scramble for power in the nineteenth century. From Nigeria to Indonesia, states were created from populations with disparate languages, social practices and economic systems. Yet, in the context of areas based on "trait" geographies, regions like sub-Saharan Africa and Latin America assume a kind of coherence and unity that is, at the very least, misleading; and perhaps worse, obscures interactions and boundaries that do not conform [to] the accepted geography of area studies. Similarly the association of "area" with "civilization," whether conceptualized as the converse of barbarism or the existence of plural entities based on distinctive cultures, is also problematic. Often civilizations are conceptualized in highly idealized terms that overlook material practices. Of even greater concern at the present moment, when the notion of "clashing civilizations" has gained a certain currency, is the tendency to see civilizations as wholly discrete and bounded entities that are at odds with other civilizations. Too often the notion

24. This statement would presumably make Ranchod-Nilsson among those scholars described two years earlier by Toby Volkman: "Many scholars have observed that "areas" of study in the American academy, such as "Africa" and "Latin America," have been generated through a combination of colonial cartography and European ideas of civilization." [p321]

25. The notion of an all-powerful, all-intrusive imperialism can be taken to strange extremes. Colin Flint and Peter Taylor assert that British imperial policy "was the great creator of 'peoples' throughout the world" [p99], including Hindus and Muslims in India, Tamils and Sinhalese in Ceylon, and Jews and Palestinian Arabs in Palestine.

> of "civilization" elides with conceptions of separate, discrete cultures unified by language, social practices, cuisine and a self-conscious attempt to preserve "tradition." This false unity obscures not only divisions within civilizations but also linkages and connections between them. The national, civilizational, cultural and regional boundaries of trait geographies "frequently draw the wrong boundaries, ignore important interactions and are driven by obsolete assumptions about national interest, cultural coherence and global processes (RW 1997,1). [p7; her citation is to the Globalization Project.]

This is a nebula of disparate arguments that cannot coalesce. First, Ranchod-Nilsson objects only that "many" of the states, territories, and regions date to the colonial scramble. Some, therefore, do not. Those that do may lack geographical coherence in many ways, but obviously have some coherence in terms of colonial history — not insignificant. Second, she notes that states have "disparate languages, social practices and economic systems". These are traits; if trait geographies are not valid, then the lack of trait coherence cannot matter. And Ranchod-Nilsson is objecting, apparently, to the country model, making use of the ambiguous term 'states' (are these conventional or empirical political entities?), but these are trait-geographical entities only in a limited sense (some version of politics), and surely per se it is not misleading to speak of them; to the extent that Nigeria or Indonesia have a single government this is a highly-significant geographical feature, and even if they have only a single legal personality this is still significant in specific contexts.

Sub-Saharan Africa and Latin America do not assume a misleading unity if they are based on actual traits. Linguistically, religiously, and in other ways the cultures of the Iberian Peninsula are quite similar, and to the extent that these are maintained in the Western Hemisphere, we have a "Latin America" that has a great deal of unity. And it is the boundaries of regions *as based on genuine traits* that would fail to conform to "the accepted geography of area studies". What Ranchod-Nilsson must be objecting to here is not the use of trait geographies but the use of conventional and arbitrary geographies that have nothing to do with traits. In fact, she seems to be objecting to the failure to implement trait geographies.[26]

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26. Harm de Blij argues against the concept of Latin America on the grounds that the region so defined is more diverse than Romance culture, and that "neither Spanish nor Portuguese settlers arrived in the Americas calling themselves Latinos." But while he dismisses the concept as an imposition, he admits that the concept "is entrenched as self-image in South and Middle America". By "South and Middle America" he means little different in extent from 'Latin America', but with far-weaker criteria. "Our hemisphere has three geographic realms: South, Middle, and North.", he states as fact; 'realm', as it happens, is the world-regional term he employs in his own work (as his text written with Peter Muller). The distinctions are purely conventional. His

When Ranchod-Nilsson uses 'civilization' to mean "the converse of barbarism" she is opposing a straw man; this is quite simply a meaning from a different and irrelevant discourse and has no bearing on the usage in question, namely that of Huntington. Civilization as "the existence of plural entities based on distinctive cultures" does not sound like a trait geography at all. The failure to consider material practices in defining civilizations would again be a failure to use trait geography properly, rather than a failure of the concept; but it would be the rarest conception of civilization that took no heed of material practices, which have indeed been central to the concept from the beginning. If "separate, discrete cultures" are in fact "unified by language, social practices, cuisine and a self-conscious attempt to preserve "tradition" ", are they truly so separate and discrete, and is this really a "false unity"? Would these unifying traditions, languages, social practices, and even cuisines not be traits that tell us something meaningful about the objects of our study?

It should be noted, first, that the examples offered as defining processes could easily be reinterpreted as traits — "commutes to Toronto" or "trades with Berlin" are identifiable traits of the human population. It should also be noted that many of the proponents of "process geographies" can make a decent case for geographies defined by processes, but only as a supplement to geographies defined by what they consider to be mere traits; and many of the examples provided of "process geographies" are not geographies of processes, but dynamic geographies of traits — precisely what the Globalization Project considers unlikely. The conclusion, then, is that *if* our geography needs to be more dynamic, the solution lies primarily not in the novel application of process geographies, but in the dynamic application of trait geographies. Stasis is not automatically indicative of a flaw in our methodology (nor, of course, is it inherently bad in a region). If there is a false stasis in our geographies, it comes not from defining regions by traits but from failing to capture what dynamism exists in the traits of humanity. In other words, the problem with trait geographies is not that they are inherently static, because if the traits themselves are static, then our geographies will (and ought to) be correspondingly static; it is that the traits change gradually over time, but our geographies are never updated. They become, instead, conventional.

South America ends where the Isthmus of Panamá begins, and his Middle America ends where the United States begins. It is hard to see how these country-based, even continent-based, realms, or even the super-realm of "Pan-America" he suggests, are superior to regions defined by cultural features of the human landscape, especially when, as de Blij concedes, they are recognized by the inhabitants themselves.

The traditional definitions of formal and functional regions match trait geographies and process geographies quite closely, such that arguments for and against are largely transferrable. This is one distinction that geographers, in particular those writing introductory texts, consistently maintain. Perhaps it is deemed inappropriate to challenge accepted wisdom in an introductory text — though there certainly are counterexamples of a text presenting the author's peculiar theories. Or perhaps publishers simply will not issue a text that deviates too significantly from the accepted wisdom, or teachers will not teach from it. But the result in any case is a perpetuation of the accepted wisdom, since each new generation of learners will become the teachers of the next.

Harm de Blij and Alec Murphy describe as formal a region that is largely homogeneous, and apparently defined by a trait. James Rubinstein goes as far as to note that a formal region can also be known as a 'uniform region' or a 'homogeneous region'. He first speaks of

> an area within which everyone shares in common one or more distinctive characteristics. The shared feature could be a cultural value such as a common language, an economic activity such as production of a particular crop, or an environmental property such as climate. In a formal region the selected characteristic is present throughout. [p21]

But he quickly allows that the defining feature may be "predominant rather than universal" [p21], an important qualification, since it may be a requirement of regionalization in all but the simplest cases. He adds:

> Geographers typically identify formal regions to help explain broad global or national patterns, such as variations in religions and levels of economic development. The characteristic selected to distinguish a formal region often illustrates a general concept rather than a precise mathematical distribution. [p21]

His wording may be intentionally elementary, but rather than add to understanding, it actually subtracts. Geographers surely identify formal regions by *identifying* global or national patterns; a pattern cannot help explain itself, though possibly he intends that geographers explain one pattern by comparing it to another, as they do. And possibly by "illustrates a general concept" he intends "captures a general distribution", a qualification that he has already made, but it would be better not to speak of 'concepts' when facts are at issue.

Robert Haining — not, it should be noted, writing in an introductory text — concerns himself not just with the definition of regions but with their delineation:

> *Formal* (or *uniform*) regions are constructed by the sharp partitioning of space into homogeneous or quasi-homogeneous areas. Formal regions are a classification of space into areas based on attribute similarity and contiguity in space. As such, formal regions should be derived by operations that satisfy the usual rules for classification (Grigg, 1967). Borders between regions are based on changes in attribute levels. Such a partitioning or segmentation into formal regions is easier to justify when the number of variables used in the 'regionalization' (the process of partitioning space) is small and becomes progressively more difficult as the number increases unless there is very strong covariation amongst the variables. It is also difficult to sustain the formal regional model when attribute variation is continuous across space. [p183]

The description of regionalization as classification is completely correct; though why it is difficult to classify geographical continuous data and not other kinds of continuous data is not clear. In fact, both are difficult, but Haining seems comfortable with "the usual rules". He is right that the process is increasingly difficult for multiple attributes (without covariation, which is not rare, but also seldom complete); the natural conclusion is that formal regions should be defined by a single attribute (or multiple covariant attributes), which must be the case if the regions are to be even quasi-homogeneous. His implication seems to be that formal regions are often taken to, more or less correctly, represent the distribution of several attributes at once; this may be based on his own peculiar definition of the formal region, but it can also be interpreted as a commentary on the common usage of the concept.

De Blij and Murphy define a functional region as "the product of interactions, of movement of various kinds", as well as "a spatial system; its boundaries are defined by the limits of that system." [p16-7] Rubinstein's functional region, while carrying the connotations of interaction, is much more clearly center-oriented:

> A functional region, also called a nodal region, is an area organized around a node or focal point. The characteristic chosen to define a functional region dominates at a central focus or node and diminishes in importance outward. The region is tied to the central point by transportation or communications systems or by economic or functional associations. [p21-2]

Rubinstein offers newspaper circulation areas, television reception areas, and department store market areas as functional regions, bounded by the limits of the node's influence. The areas of dominant influence used by Weiss are named by just such a consideration, and

would obviously qualify. The "region states" of Ohmae would qualify only under the definition of de Blij and Murphy. Haining again provides a clarification:

> *Functional* (or *nodal*) regions are demarcated using interaction data. Whereas formal regions are defined by the uniformity of attribute values, functional regions are bound together by the pattern of social or economic interaction that occurs within them and which sets them apart from neighbouring functional regions. [p183]

As Openshaw and Taylor have it, the creation of a formal region is an attempt to minimize variation within a region, while the creation of a functional region is an attempt to minimize flows between regions. Though Haining uses 'nodal', only Rubinstein insists on a node so specifically; the others all allow a geographically-concentrated economic activity to define a functional region, even if, as in Ohmae's example, there may be plenty of peripheral activity. The key element is the lack of a break in that activity *within* the region, and a break just beyond it. By this understanding, any area of unbroken human settlement would qualify, even when, in defiance of Ohmae's notion, many of them eventually surpass his approximate limit of twenty million.

Geographic information systems (GIS) as a field long ago settled the question of vector versus raster by deciding on vector *and* raster. It is hard to imagine in retrospect how that solution was not obvious from the beginning. A similar debate has hopefully been settled between formal and functional regions, which, as Hart notes, are both necessary for our comprehension of the world.[27] In fact, as Haining states,

> Some region definitions combine formal and functional criteria. Community and neighbourhood areas may be defined in terms of attribute similarity, such as housing type, but also through reference to social networks and the common use of local facilities…. [p183]

But here he is falling just short of the point. Given the identification of the correct attribute, there is no fundamental difference between formal and functional regions, just as there is

27. In such cases, the option for *all* should perhaps be taken as the default. Bob Jessop, Neil Brenner, and Martin Jones were recently privileged to publish an article in which these former "scale-centrics" (their term) argue for a framework that considers territory, place, and network as well. While this may be treated in the future as a significant research finding, it is at best an opinion-editorial retraction; they are "discovering" rather late in the game that a more inclusive explanation may be the best. Only Nixon could go to China, it seems. The article, it admits, fails to "concretize" their framework, providing exactly one mention of the real world, "the sociospatial specificities of the European Union", as an example of what the framework might address in the future, besides the sterile world of other theories and frameworks.

none between trait and process geographies. The function of a functional region is itself the commonality by which a formal region could be defined. Participating in a common activity or flow is still a common attribute. A specific formal region may be defined, for instance, by the attribute "wears Western attire", and a functional region by the attribute "trades with Delhi". But there is always a defining attribute, or 'characteristic', in Rubinstein's language. The attributes that are central to human geography are better described as traits than processes, particularly if we accept his standard of "predominant rather than universal". But even processes are easily subsumed under traits. Regardless, however conceived, trait and process geographies and formal and functional regions can all contribute to our understanding. But trait geography is the dominant descriptor of our world, and should be featured first in our analyses.

Other categories and schemes have been proposed. Most if not all confirm, when examined, that a single standard of attribute presence (or at least predominance) can serve to define a region. Haining classifies administrative regions as a separate category. In Rubinstein's (accurate) usage, administrative regions are formal: they possess the same governmental and legal system. But he offers up vernacular regions:

> A vernacular region, or perceptual region, is a place that people believe exists as part of their cultural identity. Such regions emerge from people's informal sense of place rather than from scientific models developed through geographic thought. [p22]

The example he employs is the South in the United States. But despite his definition, he demonstrates that it can be partially identified through selected empirical inquiries; his choices are membership in the Confederacy, cotton production, Baptist church membership above 50%, a high school graduation rate under 50%, winter precipitation over 50 cm, and a last frost in March. The first three are fairly essential to the perception of the South. The last three are strictly incidental. If we found these attributes elsewhere, we would not then consider the other place a part of the South. In any case, while a vernacular region is necessarily subjective, it too can be empirically defined; in fact, as a vernacular region it is defined by an attribute such as "believes itself to be living in the South".[28]

28. Vernacular regions *are* subjective; the use or non-use of any defining attribute is a matter of opinion or personal judgement. Rubinstein's six attributes can be argued either way. It may also be that one or more of the attributes is meant to be a limiting attribute (defined later).

Wirth outlines four types of regions: first, "natural and cultural areas defined in terms of homogeneity in respect to one or more traits" [p383]; second, "an area set off from other areas by barriers of various sorts" [p383], including natural or physical barriers, but also artificial (administrative, for instance) barriers; third, a region in which "the component parts are not necessarily similar or identical but stand in a relationship of significant interdependence or integration of life in one or more respects" [p383] ; fourth, "an areal unit defined in terms of an *ad hoc* problem" [p384]. It is hard to escape the conclusion that he is comparing unlike objects; he has not arrived at his list a priori, but a posteriori, and as such may successfully fit all of the existing regions (in his consideration) within one of the categories, but not necessarily all possible regions, and some regions may fit into more than one category. The first type accords with the usual definition of formal region, the third with the usual definition of functional region, and the latter is a subset of the former. The second type is a bounded region, which is a parallel category to which either formal or functional regions could possibly belong. The fourth belongs to a third *kind* of category[29], and could easily contain functional or administrative regions.

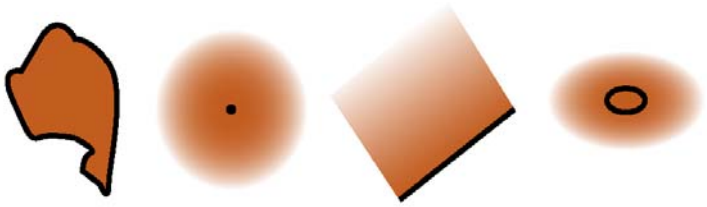
Finally, we can cite Hart's general definitions: "A region is a more or less homogeneous area that differs from other areas." [p9]; in a footnote, he states that "within-region variance is less than between-region variance. The "best" regions are those that are based on the greatest amount of interrelatedness." [p9] Even so, he notes that regions will overlap, and will contain some heterogeneity.

While the dichotomies of trait and process geographies, or formal and functional regions, are readily subsumed into a single category, there does exist a differentiation (with overlap) in the way we conceive and identify a region, as some part of the Earth's surface greater than a point and smaller than the whole. A distinct two-dimensional space — a place of some extent — must have some identifiable reference to at least one latitude and longitude if we are to know where it is. *Bounded regions* are those understood as contained within boundaries, fixed lines on the Earth's surface. *Radial regions* are those understood as radiating from an origin, which may be a point (as with a city) or a line (as with a river or a coastline),

29. That is, formal and functional regions are one way of categorizing the universe of regions, by the nature of their defining attributes. Bounded and radial regions, defined below, are another way, by their conceptual geometry. Ad hoc regions are part of a third way, by their intended use.

or even another region; they could as well be called 'proximal', as it is proximity to the origin that identifies them, and proximity is relative, as are radial regions. By nature, a radial region has no precise bounds, and even the approximate range of included distances from the origin may vary among those who would identify the region.

A city as a legal municipality is a bounded region, contained within its corporate limits, specified and easily drawn on a map; a city as a metropolitan area is a radial region, with no clear limits but loosely defined by proximity to the urban core of settlement. Because there is a preference for the official, bounded regions are often taken to be the "real" regions, such that a person might say that "technically" or "in reality" Indianapolis ends at its city limits, and does not include Speedway, Lawrence, Fishers, or Greenwood. But settlements are clearly not so easily limited. It is just as valid to view Indianapolis as a radial region centered on Monument Circle, and just as valid to include smaller settlements like Speedway and Lawrence, politically independent but now engulfed in the general sprawl, as to include smaller settlements like Broad Ripple and Irvington that are no longer independent politically but are equal participants in the urban phenomenon.



A bounded region, and three radial regions, originating with a point, a line, and a smaller region.

It is possible for a region to be a hybrid of bounded and radial, if it has a radial origin but is bounded in one or more places. A common example would be a region radiating from a point, but bounded in one direction, as São Paulo radiates from its inland center, but not beyond the sea. Another example is the linear-radial region depicted above, in which the region radiates in one direction but not the other, being bounded by its line of origin. This is the case with a coastal region, such as (historical) Guyana, or an urban development along a mountain range, such as the Wasatch Front (Salt Lake) or the Front Range Corridor (Denver). Radial, bounded, and hybrid are the basic geometries of regions.

It can be seen instantly that functional regions are, as usually conceived, radial, and administrative regions are bounded. But a radial region is not always functional, because the functional region is defined by some activity, usually a centralizing activity. A radial region,

on the other hand, can be and often is defined without reference to any activity. The Great Lakes region of North America has long since ceased to be overly concerned about shipping on the Saint Lawrence seaway; it exists simply because the Great Lakes exist, and because individuals continue to find proximity to the lakes to be a useful organizing principle.[30]

Attribute-defined regions

This study aims to use empirical standards and careful definitions to produce a more accurate depiction of the world. While the ultimate goal is an understanding of the world as an integrated whole, the first stage must be the appropriate inquiries for each matter of concern. The appropriate regions for hydrology would be drainage basins. The appropriate regions for ecology would be ecosystems. In the former case, the borders are distinct. In the latter case, they are nothing like distinct. Understanding the interaction of such factors includes recognizing the limitations on our understanding.

The relationship between attributes must determine the relationship between regions. Among other things, the variability of attributes will lead to variable regions. As attributes define regions, embedded attributes define embedded regions. In the examples above, smaller drainage basins nest inside of larger basins, and smaller ecosystems insides of larger ecosystems. The basins and the ecosystems form regional hierarchies. But the hierarchies exist in the defining attributes themselves. In the era of GIS, studying and integrating these multiple levels of concern is a relatively-simple matter. Properly employed, these attribute-defined regions would take the place of countries and larger regions alike.[31] If a region possesses a coherent nature, it will appear from the application of trait geography. If not, then something else will appear, and that new region will tell us more about the world's patterns than a conventional region.

And as attributes define regions, dependent attributes define dependent regions. If one element, such as linguistics, is influenced by another, such as politics, then linguistic

30. The Great Lakes are themselves a bounded region, a specifically-delineated expanse of the Earth's surface, even if not dry land. The Great Lakes radial region is therefore an example of a radial region originating from another region.

31. This argument is meant primarily for scholarship, and is in part that no type of region would be needed for scholarship that could not be attribute-defined. The permeation of the idea into geographic education and then into public consciousness would also be welcome, though it is perhaps not to be expected soon.

geography will be influenced by political geography. But this influence would be apparent in a direct empirical mapping of linguistics without additional reference to politics.

The duty incumbent on specialists in this process is to determine one or more attribute relationships for their areas of concern. The role of geographers then is to find and study the spatial patterns representing those attribute relationships. Geographers in this process must be generalists, in line with Hartshorne's picture of geography as an integrating discipline.

In European integration studies, the term 'variable geometries' is frequently used, to describe the way Europe is integrating, economically, politically, and in other ways, but with a different configuration for each question — the eurozone, the Schengen area, the customs union, NATO. The concept of variable geometries in this context transfers well to empirical geography. Each separate question yields a separate answer. And in particular, areas that seem to have a specific extent, say, East Asia, will have a different extent depending on our defining trait. Huntington himself said: "People can and do redefine their identities and, as a result, the composition and boundaries of civilizations change." [p24]

While the results of each inquiry produce a different set of regions, they also produce, or can produce, regions of a different nature. Some will be purely bounded or radial, while some will be hybrid, and hybrid in different ways. Radial regions will have origins of different geometries. Some sets of regions will be contiguous and exclusive, while others will be frequently overlapping, and others still will show no consistent pattern. Some will cover all or most of the area of the world in question, including the entire world, while others will be confined to particular parts, as human geography is generally limited to the inhabited parts of the world.

A general picture of the analysis would appear somewhat as in the following table, to illustrate the process of identifying empirical regions. A general inquiry (politics, culture, economics) into the human condition may be realized through multiple specific inquiries (culture, for example, specified by vernacular speech, lingua franca, religion, and script). Each inquiry is listed with the attribute that defines it. If that attribute is dependent on another, the spatial nature and extent of the regions defined by it will be likewise dependent. However, there are cases where a relationship exists and may appear in the results of an empirical inquiry, but in which the attribute must still be treated independently. As below,

both (present) government and religion are influenced by historical rule, but the spatial extent of government- and religion-defined regions must be determined solely by the empirical facts of the present. (Notes on the nature of the resultant regions are only provided here for the independent attributes. Regions are *complete* if they collectively cover the world's land area, not including Antarctica; regions are *exclusive* if they do not overlap.)

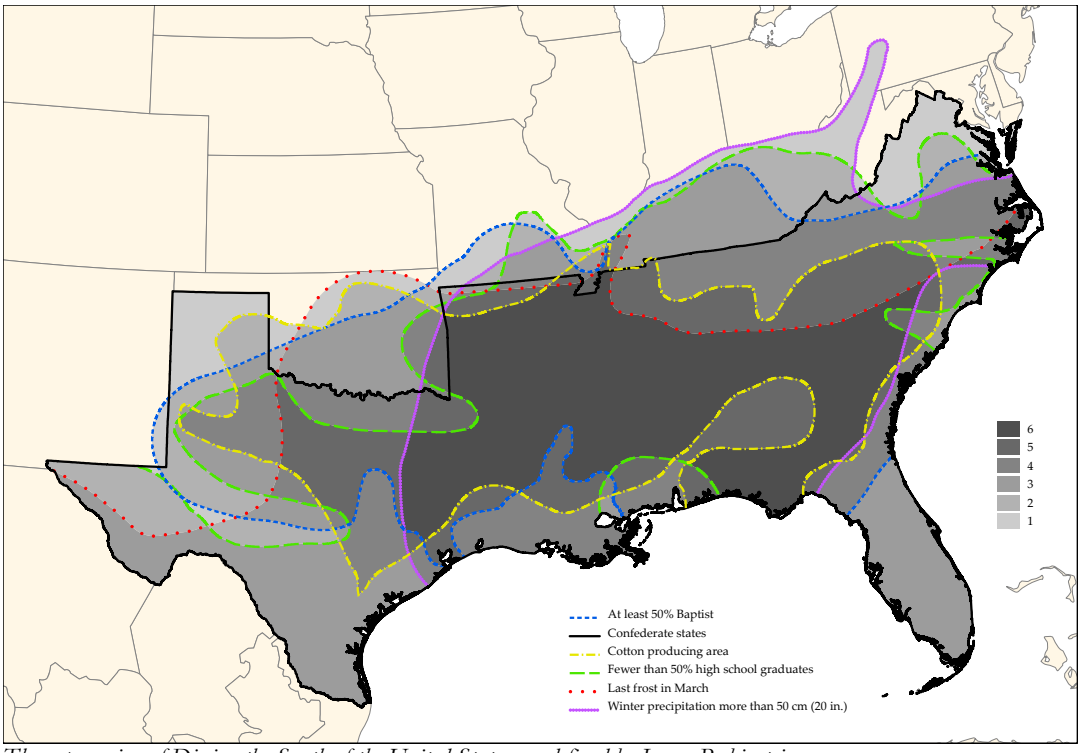
	attribute	*dependency*	*nature*
Inquiry 1, Politics 1	government	(P2)	complete, hybrid, usually exclusive
Inquiry 2, Politics 2	historical rule		hybrid, usually exclusive
Inquiry 3, Politics 3	legal system	P2, P1	
Inquiry 4, Culture 1	vernacular dialect		radial
Inquiry 5, Culture 2	regional lingua franca		radial
Inquiry 6, Culture 3	official dialect	P1, P2	
Inquiry 7, Culture 4	colonial lingua franca	P2	
Inquiry 8, Culture 5	script	C1, C3, C6	
Inquiry 9, Culture 6	religion	(P2)	radial, overlapping
Inquiry 10, Economics 1	currency	P1	
Inquiry 11, Economics 2	trade bloc	P1	

The category of superregions includes most of the vernacular "world regions". We can compare the examples of South Asia and East Asia. Given a broad array of attributes, as below, the peripheries of these superregions will occupy many of the same parts of the world. And yet each attribute in the definition is inherently connected to the idea of the vernacular region; Tibet, southeast Asia, and Japan are all legitimately connected to both spheres.

World regional name:	South Asia	East Asia
Historical English name:	India	China
Language:	Indo-Aryan continuum	Sinitic continuum
Religion:	Hinduism / Buddhism	Confucianism
Writing:	Brahmi scripts	Chinese characters
Present government:	Indian Republic	People's Republic of China
Historical rule:	British Raj / Mughal Empire	Chinese empire

These examples and many others also fall into the civilizational paradigm, including Huntington's; but Huntington's civilizations have little overlap, as his thesis requires.

Superregions also, to return to Rubinstein's example, include smaller vernacular regions such as the South of the United States. Graphically, Rubinstein's South illustrates the configuration of a superregion, with overlapping boundaries of individual attribute regions carving smaller regions in which a given number of attributes is present, the core being the central area where all attributes intersect.

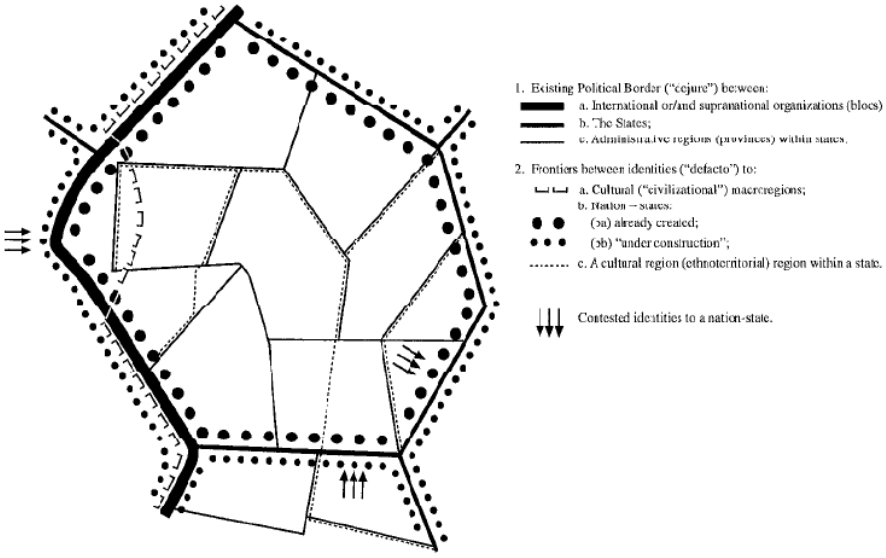


The superregion of Dixie: the South of the United States, as defined by James Rubinstein.

Rubinstein's method is inverted, though. He has a spatial extent in mind, and seeks attributes that align with it; he places *where* before *what*.[32] If we wish to explore a vernacular region in this way, we must identify the attributes associated with the vernacular *idea*, and determine the empirical extent of those attributes.

Vladimir Kolossov and John O'Loughlin describe, and depict, an area divided into smaller areas, fragments, by multiple crisscrossing borders determined by various attributes of the landscape.

32. John Shelton Reed makes a better attempt to consider multiple attributes of the South, considering Baptist churches, kudzu, cotton, presidential voting patterns, percentage black, lynchings 1900-30, country music, Southern Living readership, and 'Dixie' and 'Southern' in business names.



Each border lies between a region where a given attribute is present, and a region where it is absent. The fragments are the minimal contiguous areas created and bounded by all the borders, so that no border passes through a fragment. Each of these fragments is therefore uniform with respect to all of the attributes in question; each fragment is a component of the various regions defined by each of the attributes.[33] Along the lines of the variable geometries concept (when applied in Europe, it is always applied to whole states), a region for a particular attribute can be reassembled by selecting all of the fragments in which the attribute is present, which then recompose the region in the fashion of a puzzle. If we could identify in advance all attributes that might conceivably be of concern, a fragment would be the equivalent of Ronald Johnston's operational taxonomic unit, the atom of any future regionalization.

In all likelihood, it is the fragment, not the superregion, that Minshull has in mind when he writes of multiple feature (or multiple topic) regions. (The core of a superregion is itself a fragment, specifically the fragment containing all of the attributes of interest.) By this view, a single feature (single topic) region is always larger than a multiple feature region. A vernacular region might be imagined as a fragment — that is, a bounded region uniform with

33. As it happens, the graphic of Rubinstein's South depicted here was constructed in precisely this way. The borders defined by each attribute were digitized as linear features. These linear features were used to divide an underlying polygon layer into smaller polygons. Essentially, each division is sequential. If we were to divide a square in half diagonally, it would result in two pieces. If we were to divide the now-divided space in half along the other diagonal, it would result in four pieces. The division for the South resulted in tens of fragments, each of which lay within a certain number (0-6) of the borders, and was shaded according to a field containing that integer.

respect to several attributes — but it is much more likely to resemble a superregion. Put another way, the popular view might be that there exist many sizable regions that neatly represent multiple attributes (with coincident borders) of the landscape, but the real instances of "pure" regions are relatively small, and vernacular regions are closer in scope to the complicated realities of superregions, including their impure peripheries.

GLOBAL INTERDISCIPLINARY GEOGRAPHY

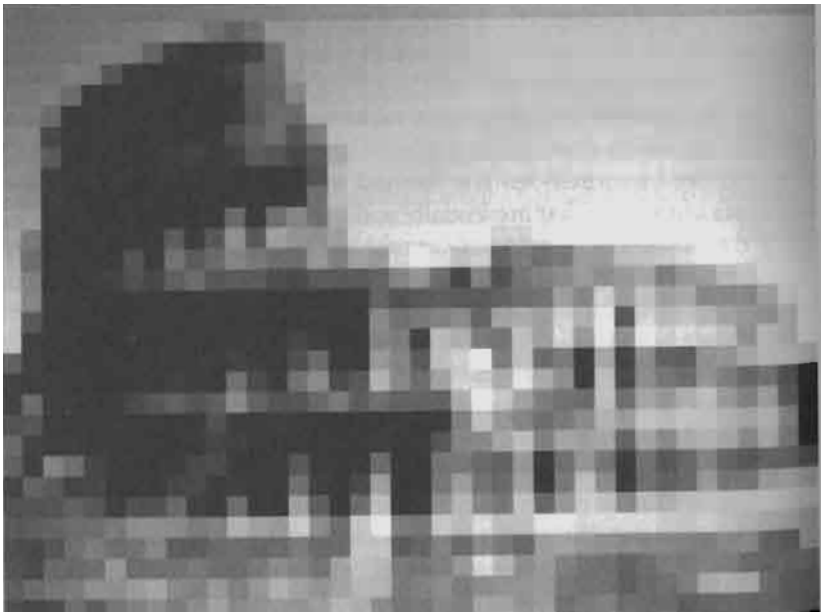
Hart, giving the presidential address to the Association of American Geographers in 1981 (published in 1982), shares with his fellows a detailed conception of our responsibility to society. Included in that is the responsibility to develop a clear picture of the world for the general education of society.

> It is inconceivable that anyone could consider himself educated who does not have a basic knowledge of world patterns — the distribution and interrelationships of the major physical, biotic, political, social, and economic lineaments of the contemporary world. Society expects geographers to provide this information in a systematically organized framework that will facilitate an understanding and an appreciation of our large and complex world. [p20]

A key premise of this study is the value of studying geography at the global scale. While this is less common in previous practice, it is supported by general principles of inquiry. Any attempt to arrive at universals is improved by examining the most inclusive samples — we can account for more situations only when we are considering more situations. As distinct from physics, biology, and even sociology, the studies of both human geography and terrestrial geography[34] have by definition no broader scope than the Earth; there are no phenomena potentially existing elsewhere for which we must give account. Earth is the ecumene.

Furthermore, while the same fundamental laws may account for all natural occurrences, both the physical and the social sciences have established patterns of seeking systemic universals at different levels of examination. Genetics may be derivative of physics, but it has developed its own set of principles that do not directly refer to physical principles. Sociology may be derivative of psychology, but it, too, has developed an independent set of principles, typically employed only at the scale of society. Changes in scale may produce different insights in geography as well. MacEachren (2004) provides this illustration:

34. The etymological irony in the expression is apparent; 'TERRA' and 'TH' (gē) at one point governed the same semantic domain.



For comparison, the same image viewed from a distance is far more recognizable:

It may not be possible to discover geographic patterns applicable to the global scale if we confine ourselves to localized case studies. Susan Cutter, Reginald Golledge, and William Graf assert that "geographers have repeatedly found, at some scales, spatial regularity in distributions of occurrences that seem random or indeed chaotic at other scales." [p308] MacEachren (1994) also points out that analysis at different scales and resolutions may reveal different patterns, without any of them necessarily being the definitive underlying pattern. Where this is true, a change in scale will not solve the problem, but it will increase the chances of an important underlying phenomenon being uncovered — not a sufficient condition for its being recognized, but a necessary one.

Global geography should be viewed as the functional equivalent of a geographic area. The choice of scale forces certain other decisions on us, such as the precision of data that we can work with. But if we choose a more conventional area such as Latin America or even México, we will still be forced to make such decisions. México is also a large and diverse place which it is impossible to study in full detail. Furthermore, the tools to study geography

at the global scale are unique. It is merely assumed that a scholar learns to do global geography well by spending ten or twenty years studying smaller areas. It is more reasonable to assume that a scholar learns to do global geography well by spending ten or twenty years studying global geography. While a good geographer can make the scalar adjustment after experience with a smaller area, this is by virtue of being a good geographer, not because the smaller area is the appropriate apprenticeship for the field.

The ultimate goal of such study is to illuminate the patterns of interaction among the various characteristics under consideration. Religion affects language, language affects politics, politics affects economics, economics affects religion. Understanding these effects, and the patterns they create, is crucial to understanding the world we inhabit. If, in other words, we adopt an interdisciplinary approach and a global focus, we can produce a geography of breadth and depth.

The patterns of interaction among these data sets may reveal new information, either previously-unknown dependencies in the underlying phenomena, or unwarranted dependencies in the data-gathering process. The former can help us to understand the world better, the latter can help us to improve our data sets.

Lewis and Wigen (1997), reconsidering the process of dividing the world into regions, strongly suggest that global geography deserves to be a respected specialty in its own right; this argument is directed squarely at academic geography, where the point has seemingly been lost up to now. World historians like Wallerstein make the point implicitly. History Hartshorne sensibly treats as an analogue for geography, of time to geography's space.[35] And geography is in origin the study of the world. It is reasonable that geography would recognize, as history has done, the world as an appropriate field of study.

"Remote sensing"

Study at the global scale renders field work impossible. Most of the data used in such study must be gathered and likely processed by others. The validity of this dependence is a subject of debate. Anssi Paasi (2000) uses the metaphor of remote sensing to describe the scholarly study of the world's phenomena at a remove, physically and especially culturally.

35. Owen Dwyer (personal communication) has pointed out the similarity between regionalization in geography, and the identification of periods and eras in history, which are subject to their own conventionalities.

Sami Moisio and Vilho Harle take up this metaphor in a direct response to Marco Antonsich (2005), and indirectly to a general practice, albeit one that they admit to indulging in themselves. Here the remote technique is the use of texts, and their particular concern is the widespread use of English-language literature to study non-Anglophone cultures; their point is generally sympathetic but weak. They complain, for instance, about favoring academic articles over those "in political action"; whereas the latter would surely be seen as less reliable in an academic environment for all but the most specific research. To make their point, they claim that reasoning varies even within linguistic cultures, such as between the US and Britain. This is a suspect social-geographic determinism; surely reasoning varies from person to person, not country to country. The authors' critique of Antonsich's work is hyperbolic, noting five ways in which his piece epitomizes what is wrong with geopolitical remote sensing, remarking at one point that Antonsich's sources say "nothing at all" about Finnish identity. They engage Antonsich on the most basic level of epistemology, repeatedly asking how something is known; but in attacking one of his sources, they claim that the source's view is invalidated by empirical research, without citing any such research, and later use the formulation "we tend to argue" in front of a factual assertion without supporting evidence, as though an assertion beginning with "we argue" were not precious enough. The end speaks of "witnessing the birth of a new critical armchair geography that remains highly uncritical of its own methodological weaknesses" [p209]. Not only is that a harsh charge for them to make against Antonsich, but it is also less than credible after the content of their article. Claims of discovering a new and dangerous phenomenon should always be so easy to dismiss.

Paasi is a noted political geographer who coined the metaphor and is himself Finnish, and so might prove a useful voice in a debate on distance study and Finland. He does (2006) correctly note (without criticizing Moisio and Harle) that lumping all members of a culture together is fallacious. He points out, with the example of world geography textbooks, that geopolitical remote sensing is not new, while failing to point out that it is in such cases good and necessary. And though Paasi endorses this remote sensing in principle, generally he bounces around between the debaters, attempting a middle ground on the specific issues, assuming for himself the role of the sensible non-partisan.

It falls to Antonsich (2006), then, to defend himself against Moisio and Harle, employing sense and wit from the opening line, thanking them for declaring him a perfect example of

the problem they have identified.[36] He notes that he did actually spend time in Finland (acknowledged but dismissed by Moisio and Harle), and that he is not a native Anglophone; he deftly deflects their criticisms of his text selections. But the great virtue of the reply is the defense on the issue. Antonsich claims not only that geopolitical remote sensing is valid, but that it has advantages of scale, potentially providing a broader perspective on the matter being studied; and he rejects the "either/or" argument of Moisio and Harle, claiming instead that remote and on-site research can both be valid and useful.[37] His parting shot rejects the post-modernist element of Moisio and Harle's critique, referring at the same time to the modernist element of the same critique.

As for non-metaphorical remote sensing, Blumberg and Jacobson correctly point out that it affords the opportunity to study the world as a single unit[38], and to incorporate global data, an approach they strongly advocate. While, as mentioned before, such data are highly valuable because they are also objective and disregard artificial regions[39], there are simply too few areas where physical remote sensing can inform us. We must rely on data sources provided and filtered by others. This is a constraint that few if any scholars avoid.

Interdisciplinary geography

Developing an improved conception of global human spatiality must start with an interdisciplinary study of human qualities, with each examination revealing its own attribute of the human landscape, and each attribute defining its own regions. The process of comparing these attribute-defined regions to reveal previously-unseen patterns is not possible in a narrow geography of a single subdiscipline, where only a single question is explored; there would be no grounds for a comparison.

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36. This brings to mind an exchange on the television series 'Chicago Hope': "You personify everything I find repugnant in medicine today. Everything." — "Well, I like to be thorough." [Episode 1-16, 'Freeze outs']
37. To return to the common theme of avoiding a false choice.
38. In an endnote they provide a small number of examples of this approach.
39. The pixel of remote sensing is treated here as a technological, not a methodological, artifact. It is true that each pixel is an arbitrary region within which uniformity is taken to exist whether it does or not; but in the original sensed image (as opposed to processed or resampled image), the pixel is the smallest possible unit for the detection. In other words, as far as the sensor can tell, the region captured in the pixel actually *is* uniform. At narrow scales this may distort reality. At the global scale, remote-sensing resolution would generally exceed our own processing ability.

To Wallerstein, study should necessarily be interdisciplinary, indeed "unidisciplinary". Hart (1982), while a supporter of disciplines, likewise supports the interdisciplinary approach:

> The practitioners of individual disciplines must develop a form of tunnel vision, and they must restrict their attention to a small number of key variables.
>
> Such narrow concentration is mandatory if one wishes to comprehend the operation of individual variables, but it can have an expensive trade-off if the scholar ignores or only partially and incompletely understands critical variables that lie beyond the purview of his particular discipline. Any attempt to understand the complex interplay of the myriads of variables in the real world requires another kind of approach, which puts back together, or synthesizes, all of the variables that the individual disciplines have tried to isolate for close analysis. [p13]

According to Hartshorne, geography (like history) is an integrative discipline, inherently interdisciplinary at its best; this is a view repeated by Hart. Cutter, Golledge, and Graf place an integrative and broad geography in the past; but they clearly hope for it to broaden its focus once again.

Ian Douglas supports interdisciplinary practice in geography, particularly across the human-physical divide; as his refrain has it, "the unity of geography is obvious". By implication and by name he argues against too much specialization, and closes by saying that "some of us must escape from the narrow research followed to gain Ph.D.s and broaden our horizons" [p462]; though the same argument surely suggests that some should escape from narrow research *while* pursuing the Ph.D. And if academic research requires specialization, if Erica Schoenberger is right that the discipline serves as a master culture and carries strong incentives to remain within the discipline and to protect and maintain it, at what point are researchers supposed to learn interdisciplinary skills?

It is worth noting that when Mei-Po Kwan argues for "hybridity", for erasing the line between qualitative and quantitative geography ("social-cultural" and "spatial-analytical", in her usual terminology)[40] and between physical and human geography, she is able to cite numerous scholars who have attempted and advocated just that. Schoenberger, too, notes a

40. The interpretation of Kwan's terms as qualitative and quantitative is disputable. But if it is inaccurate, then Kwan is missing a widely-recognized fissure in geography (and all social science), and substituting an observation of her own. The terminology is curious, as all social science should be analytical, and all geography spatial.

significant amount of interest, not merely rhetorical but also financial[41], in interdisciplinary academic study.

Counterintuitively, to achieve interdisciplinary geography and find interactions, we must first carefully isolate each field of inquiry. Two inquiries have been chosen for this study: the political question of empirical government control, and the cultural question of intelligibility of the primary spoken dialect. Government control is essential to any such examination, as it forms the ostensible basis of the country model. Language has been chosen for a second analysis because it is, arguably, the central feature of culture; language is the medium in which all other culture is carried, and a language barrier is the most effective cultural barrier. These two inquiries are also subjects in which an empirical reexamination can perhaps be most informative. In the former case, this is due to the pervasive influence of the notions of authority and law. In the latter case, the standard global linguistic resource ('Ethnologue') is heavily conventional, including influence from the country model. While other inquiries would surely have been helpful, any limited number of inquiries would be, at best, a start.

In politics, the most important regions are those defined by governments de facto, organizations for control of territory and the population and resources thereon. The main strands of geopolitical literature are concerned primarily with conventional (in this case, juridical) regions, and fail to distinguish clearly between empirical and juridical. Government-defined regions are either radial (with control originating at the seat of government) or, more commonly, hybrid, with power still centered but clear limits (borders) identifiable in some or all directions. These regions collectively cover most of the world's land area and some of its water, and are usually (but not always) contiguous. Political borders, where the governmental situation changes from one state to another, should be depicted only where the limits of control by at least one party can be ascertained; these lines of control are directional. Political control can also be identified in networks of settlements, in cases where control over hinterland regions is not sought, not known, or not possible.

In language, the most important regions are those defined by mutual intelligibility of the vernacular or home dialect, with regions at different scales determined by levels of

41. It is surely fair to say that to the extent that interdisciplinary research is funded, it is valued, and not merely in the common sense.

intelligibility and degrees of relatedness. In other words, at the global scale we might choose to identify some regions based on distant relations — language families — while at narrower scales we might choose to confine ourselves to regions of high mutual intelligibility (since all intelligibility is a matter of degree). Intelligibility-defined regions are primarily hybrid and often from multiple origins (that is, they will at some points have identifiable edges, but in most cases exist as networks of radial settlements), are limited to the inhabited areas of the world's land surface, and commonly overlap. The relationship between regions reflects the relationship between dialects; closely-related dialects with high intelligibility nest together inside broader dialects of lower intelligibility, which nest inside subfamilies, inside families, and the linguistic regions defined by these dialects similarly nest. In its evolution, language exists in continuum, where language changes gradually over space, one dialect blending gradually into the next, with each dialect intelligible to its neighbors, while not necessarily intelligible to other dialects further away in the continuum. Linguistic regions, therefore, are largely dialect continua, without clear lines between the component dialects (including, typically, the dialects conventionally identified as "languages"), so that in many cases the region defined by a family is the lowest distinguishable level. At the global scale, regions overlap at all levels and across levels.

THE POLITICAL WORLD

The central feature that defines political space is the matter of effective, empirical control. How a location is governed, the body to which it is subordinate, determines its primary political region, and its inhabitants' primary political environment. Even peripheral attributes that qualify as political are derivative of the present government. While some are also derivative of past government, such as the historical legacy of rule and the legal system that results from that (broadly dividing the world into common law and code civile regions, for example), the perpetuation of that historical influence is also dependent on present government. If the ruling party chooses to abolish common-law practices in a territory, it can do so.

But politics, as the foundation of the conventional system and the *where* before *what* fallacy, deserves special attention in any effort to bring empiricism to the study of human regions. The analogue of the conventional in politics, the juridical, is the subject of much belief, faith, study, debate, chauvinism, obfuscation, and even lying. International law, international relations, and geopolitics, the main discourses on juridicality, are terminologically vague and often deliberately distortive of meaning; and the relevant scholarship has largely failed to address this, and even contributed to it. The path to empiricism in political geography lies through these discourses.

The modern international system

The present, Westphalian state idea took hold of the European imagination with the treaties of Münster and Osnabrück in 1648, in which, as James Caporaso describes it, medieval universalism gave way (theoretically, it should be noted) to sovereign statehood, "a system of territorially organized states operating in an anarchic environment." [p2] The Westphalian idea proved a powerful one, intellectually and emotionally as well as historically, coloring the common modern conception both of what is and of what should be, and the equally-common confounding of the two. As Robert Jackson notes, it is simply assumed that the sovereign state and the conventional political system represent the natural order of the world, even equivalent to physical phenomena, beyond human control, despite the fact that a simple look at history proves otherwise.

The basic meaning of 'sovereignty' seems to be "the right to rule". In all its uses, the speaker is assigning or denying a right to rule; if claiming sovereignty, then claiming a right to rule. This is a moral judgement; even when reference is made to an international standard or treaty, and the notion of a legally-granted right[42] that might be contained in it, there is still a moral claim about the (moral) rightness of the international standard or treaty to begin with. In other words, legal rights are just technical matters that we are free to ignore, unless law, however defined, also implies natural law, or justice, through the positivist presumption that we are morally obligated to adhere to law. In most cases, claims of a right to rule are not indirectly justified through reference to positive law which carries moral obligation; rather, claims of a right to rule are directly justified through appeal to natural law. While it is appropriate for scholars to judge morality in their capacity as private individuals and even intellectuals, such a judgement cannot be argued rationally without agreement on a postulate scheme. As there is no commonly-accepted scheme and this inquiry will not propose one, we must take all discussion of sovereignty as claims that cannot be disputed *or* accepted. The authors of these claims certainly do not base them on a single scheme of morality. Nonetheless, the Westphalian system largely represents a single set of claims. The diversity in origin for these claims does not prevent their authors from agreeing on the end result of the claims — who possesses sovereignty and where it is.

In the Westphalian system, sovereignty works precisely like a franchise (in the commercial, not the electoral, sense). There are only so many franchises. Each comes with a specific right, namely the right to rule a specific territory. Each point on the world's land (often excluding Antarctica) is assigned to one franchise. Whoever holds the franchise is entitled to rule that point of land. The assigned territories do not overlap. Only rarely is a new franchise recognized, and only rarely are the assigned territories changed. But the *holders* of the franchises change frequently, under various rules for determining succession. In some instances, democratic elections are held and power changes hands peacefully. In some cases, no genuine election is held, and rule is maintained by a single group, or passed from an autocrat to a chosen successor. In some cases, rule is violently contested; in these cases, as

42. Throughout this chapter, the problem of imprecise language will be a primary focus. The term 'right' can be used in multiple ways, though the claims behind the term 'sovereignty' all lead back to morality or natural law.

Jackson and Jeffrey Herbst have separately pointed out, physical control of the recognized capital city is sufficient to possess the franchise as well.

Some of these franchises carry special privileges. In particular, we can think of the golden franchises holding permanent seats on the UN Security Council. The council contains a Russian and a Chinese franchise. The Russian franchise was held by the Soviet Union — a Russian imperial dynasty, essentially — until 1991, when the Russian Federation seized power from the Soviet Union in a deal with the other fourteen "constituent republics" of the union. According to that deal, the franchise passed to the Russian Federation, including the permanent seat (and, not coincidentally, the Soviet Union's nuclear weapons).[43] The Chinese franchise was held by the Republic of China, confined since 1950 to Taiwan; in 1971 the General Assembly stripped the franchise from the Republic of China and awarded it to the People's Republic of China, which controlled the mainland. In the latter case, the franchise even remained constant in territorial terms. First the Republic, and then the People's Republic, were recognized as the legitimate rulers of both the mainland and Taiwan. On the ground, of course, the franchise change meant nothing, as the People's Republic had not by that fact gained control of Taiwan, and the Republic had not by that fact lost control of the mainland.

The current state system serves the interests of governments that already have a seat at the table, and whose territorial ambitions are essentially satisfied by the system. But it is also supported by those individuals who have a well-intentioned but simplistic conception of self-determination and legitimacy in the post-colonial world, the same individuals who contributed intellectually to decolonization. This latter view Jackson terms "international liberalism" — the notion that the traditional values of liberalism, for the rights and dignity of individuals as free and equal members of society, should be extended to larger groups, in this case states; that governments have a moral obligation to respect the rights and dignity of other governments, as free and equal members of international society. Jackson in fact parallels decolonization with the contemporary drive for integration in the United States; and while some of the parallels are drawn upon the traits of individuals, on the whole it is the preconceived "peoples" — tied to colonial entities and defined by their recognized

43. It is also not likely to be coincidental that for much of the Cold War, the holders of the permanent seats on the UN Security Council were also the only accepted nuclear powers under the Nuclear Non-Proliferation Treaty, as well as the world's five largest arms exporters.

boundaries — that were identified as the oppressed subjects in need of liberation, and affirmative action for these peoples was instituted to redress the inequalities resulting from past injustices. Inherent in international liberalism is the disregard for the means by which those governments are constituted and rule. State-directed nationalism, as Charles Tilly points out, can be and is manufactured by those who would rule, in order to strengthen their rule.[44] International liberalism is surely manufactured by the same group, for the same reason. But though these notions serve the interest of rulers and are encouraged by them, they are nonetheless sincerely-held beliefs for many.

The key observation for considering the public discourse, lay beliefs, political assertions, and academic literature concerning states is made by Jackson and Carl Rosberg. The term 'state' is used both empirically and juridically. Juridicality is a special case of conventionality; in the political field the two are nearly synonymous, and the broader conventions on political order and spatiality derive from juridical practice, which is simply a narrow conventionality. The same contrast between empirical and juridical usages can be found for associated words: 'sovereignty', 'independence', 'authority', 'government', 'occupation', 'formal', and even 'control'. These terms are so often abused that there cannot be a single realm of literature in which they can be used without careful definition and rigorous adherence to the definition. That, needless to say, rarely obtains.

Jackson and Rosberg trace much of the thinking on empirical statehood to Max Weber, who outlines the objective criteria, primarily the monopoly on force, that determine the existence of a state, in the empirical sense. When examining the political situation in Africa, Jackson and Rosberg found a triumph for the juridical state. Specifically, the respect paid by empirical states for juridical statehood led to a system of protection for territorial units in Africa that lacked the ability to sustain themselves and would, in another time, have been absorbed by more-capable entities. Pre-colonial Africa was a "state system without fictions", according to Jeffrey Herbst [p55], but owing to the fiction-laden system that succeeded it, a weak post-colonial entity was able to function within that system as though possessing the qualities originally associated with statehood. This entity Jackson would later describe as a

44. The movement of capitals, which comes up in Jeffrey Herbst's work, has generally been an expensive aggrandizement project; Félix Houphouët-Boigny, for instance, chose Yamoussoukro as the nominal capital of Côte d'Ivoire because it was his birthplace. But a central location is also intended to cement control of a government over its subjects. Herbst surprisingly seems to endorse this. While it is true that moving capitals could be more "logical" for administration, that is only true in the sense of rule, and it is hardly a commendable thing, to perpetuate the personal rule of the élites through strengthening the national myth.

'quasi-state', though 'pseudo-state' would have been more accurate, as well more withering, as his intent might have been. O'Loughlin (2001) uses 'pseudo-state' to mean something nearly the opposite:

> A major recent development has been the creation of pseudo-states as a compromise between the demands for full independence and repression of recently-mobilized groups. These pseudo-states have the trappings of statehood (flag, army, police, local control, government, etc.) but lack international recognition. [p623-4]

He offers the examples of Transdniester, Kosovo, the Serb Republic of Bosnia, Abkhazia, Chechnya, and the Turkish Republic of Northern Cyprus, which do indeed have such "trappings" of statehood as local control and government. Thus, where Jackson's quasi-state has juridical but not empirical statehood, O'Loughlin's pseudo-state has empirical but not juridical statehood. Etymologically these terms are problematic. 'Quasi-' implies seeming, without a judgement on reality; 'pseudo-' implies seeming in contradiction to reality.[45] Surely the original intention of the word 'state' was to describe an empirical state, which is why it can otherwise be called an *empirical* state. It would certainly have been helpful if discourse on politics had retained 'statehood' for the empirical sense while only appropriating 'sovereignty' for the juridical sense. But while the terms 'juridical statehood' and 'sovereignty' have significant overlap in definition and application, there are important distinctions. 'Sovereignty' can refer to the franchise itself, or be a property of that franchise. 'Statehood' can refer to the property, while 'state' would refer to the franchise; but in both cases the implied reference to the empirical meaning of 'state' (even when modified by 'juridical') gives the term a power and place in academic discourse, whereas 'sovereignty', when it departs from its Westphalian sense, enters again the realm of the moral and dubious.

Social scientists might be presumed to favor the study of the empirical. This is a presumption too far; the study of international law by itself seems appropriately situated within social science. Studies of international law, as James Crawford's, can suffer from the confusion of the empirical and the juridical, among other senses. Even Jackson and Rosberg, though, fail to distinguish clearly and consistently between the empirical and juridical uses. The reader cannot be certain what their statements mean, since the two senses are interchanged frequently and without warning. It is not surprising, then, that treaties and

45. Conversely, 'crypto-' implies *not* seeming in contradiction to reality. The appropriate terms, therefore, would be 'pseudo-state' for Jackson's entity, and 'crypto-state' for O'Loughlin's.

international rulings, and legal scholars like Crawford, move between the two senses violently. Crawford speaks of the thing called 'state', and wants a definition for the word that encompasses its use in international law, even though it is not always used in a single way, to refer to a consistent class of objects, or even with integrity. A duplicitous description of an entity as a state, or a duplicitous refusal to describe an entity so, lies behind much of the confusion.

When Crawford distinguishes between "formal" independence and "actual" independence, he is doing what he appears to be doing. He is making a distinction between using a word to mean what it actually means, and using it to mean something else. This formality, or better yet formalism, hinders our understanding unless we employ our empirical sense to identify it, and then to examine the empirical realities beneath it.

Origins of confusion

There are perhaps three reasons why we might want to engage with international law and the scholarship, including jurisprudence, surrounding it. One is the service of the interests of the existing franchise holders. The second is Jackson's international liberalism. The third reason, the only scholarly reason, is to study those who are motivated by the first two, and the consequences of that motivation. Both the law and the scholarship are an impenetrable thicket of nonsense tended by the recognized entities to obscure their naked political interests. That there are other tenders is evidence of the success of the project.

At the center of the thicket on statehood is the Montevideo Convention, whose first article declares the following:

> The state as a person of international law should possess the following qualifications: a) a permanent population; b) a defined territory; c) government; and d) capacity to enter into relations with the other states.

Of particular interest is the last item of the article, the capacity to enter into relations. Much hinges on the nature of this capacity. The capacity to fly, for example, is beyond humans for simple physical reasons. The capacity to play the piano professionally, by contrast, is possessed by most humans physically, but beyond most of them for other reasons. Does ability to find partners determine ability to enter into relations with other states? The third article seems to suggest not: "The political existence of the state is independent of

recognition by the other states." Though perverse, the sixth article provides yet more evidence that the existence of a state has nothing to do with recognition: "Recognition is unconditional and irrevocable." This suggests that even should the state demonstrably (perhaps even voluntarily) cease to exist, it is still recognized by all states that have ever recognized it.

But arguing against the factual interpretation of the fourth item of the first article is that it seems, factually, to be quite superfluous. A government over a permanent population and a defined territory already has the factual capacity to enter into relations with other states.

Crawford is one of those other tenders of the thicket of international law; he naturally emphasizes juridical statehood, and uses Montevideo as a point of departure. The question of factuality is, for him, far from clear:

> To summarize, statehood is not 'simply' a factual situation but a legally defined claim of right, specifically to the competence to govern a certain territory. Whether that claim of right exists depends both on the facts and on whether it is disputed. Like other territorial rights, government as a pre-condition for statehood is thus, after a certain point, relative. But it is not entirely so: each State is an original foundation predicated on a certain basic independence. This was represented in the Montevideo formula by 'capacity to enter into relations with other States'. [p47]

He identifies five "hard core" principles of legal statehood — characteristics, according to Crawford, but essentially entitlements for those entities that have statehood, however acquired. States have "plenary competence" to act internationally (through treaties, et cetera); they are "exclusively competent" (but not omnicompetent) in internal affairs, "their jurisdiction is *prima facie* both plenary and not subject to the control of other states"; they are "not subject to compulsory international process, jurisdiction, or settlement, unless they consent, either in specific cases or generally"; states are among themselves equal (formally, not morally or politically), and must consent to any derogation from equality; and finally, "any derogations from these principles must be clearly established". [p32-3] As he turns to the consideration of the criteria by which entities are judged to be states, he rejects, at least as conclusive criteria, "possession of a nationality" (in a footnote, he writes that Andorrà is "probably not a state"), being governed by international law, responsibility for external affairs, and the competence "to develop or change customary international law". [p34] However, if an entity is not internationally responsible for its acts, it is conclusively not a state. Crawford also notes that these rejected criteria are presumed rights, once statehood

has been determined. This leads him to ask whether there are, in fact, objective criteria, which brings him back to Montevideo.

When Crawford enters his detailed discussion of Montevideo, he begins clearly and empirically. Considering the matter of territory, he claims that the right to (juridical) statehood is predicated on "exercise of full governmental powers" [p36] in some territory, and asserts that (empirical) statehood exists if such control exists, despite claims even to the entirety of the territory in question. He notes that the non-recognition of Lithuania in 1919 because of a boundary dispute was "politically motivated", not an indication that Lithuania was not considered to be a state. Speaking ambiguously of statehood, he says that "the only requirement is that the State must consist of a certain coherent territory effectively governed" [p40], which renders territory subordinate to "government" and "independence", rather than being a separate criterion.

States are "territorial entities", but they are "also aggregates of individuals". [p40] This brings in the Montevideo requirement of a permanent population. He finds that nationality is dependent on statehood, not statehood on nationality, and that the grant of nationality (in the domestic or "municipal" sense) is at the discretion of the state.

Turning to the third criterion of Montevideo, Crawford states that competent government may be the central requirement of statehood.[46] But after insisting on its centrality, he then says in his own voice that "there can be little doubt that the Congo was in 1960 a State in the full sense of the term" [p42-3], despite having just noted that the entity recognized as its government was unable to govern effectively. His basis for Congo's statehood is the international recognition afforded to the Congo. Since in his view Belgium had the unquestioned right to govern the Congo, it could bequeath that to the new Congo. He has, at this point, suddenly shifted to juridical statehood. Of course, since he had previously gone to some length to discuss the identification of empirical statehood, it is appropriate to note that he has shifted, in fact, to fiction.

When discussing the example of Finland, Crawford introduces the principle of self-determination, which he applies in a limited, arbitrary way; absent self-determination, jurists (and he) require evidence of real government before declaring that a state exists. In his

46. 'Government', he says, has two aspects, the exercise of authority and the right to exercise authority; and though he is no more explicit, he seems to be referring to 'government' as a word with two meanings. He does explicitly state that the words 'authority' and even 'rule' may be used for "a claim of right" or "an actual exercise of power". [p52]

discussion, he exposes caprice in the system. He denies that the temporary secession of Biafra was an instance of self-determination. Jackson, explicitly referring to a term and not a concept, notes of the 'self-determination of peoples' that

> it is the negative right of ex-European colonies — which usually contain different peoples but are not peoples themselves — to constitutional independence under an indigenous government regardless of conditions or circumstances. [p41]

He attributes to Ali Mazrui the term 'racial sovereignty' to describe this limited use of 'self-determination', namely, that there can be no rule of non-whites by whites. According to Jackson, the "Belgian thesis" that self-determination, if consistently applied, would apply in metropolitan areas as well, was of course rejected. And land empires like Russia and China successfully supported the clarification that self-determination only applied in cases of maritime separation from the metropolitan power, insulating themselves from decolonization pressure. Discussing the transformation of 'self-determination' through the actions of Third World activists (and, he might have added, their First World sympathizers), he says:

> Indigenous successors to those [colonial] rulers were by definition legitimate whether or not they expressed the popular will. Their rights as sovereigns and the human rights of their subjects to self-determination were one and the same. ... Self-determination no longer means the same as previously and almost means the opposite. [p77]

The new definition explicitly excluded nationalities within or across colonial-jurisdiction lines, and any attempt at self-determination by such nationalities was declared a violation of international law by the UN General Assembly. This has given the new states, according to Jackson, a license to oppress ethnic minorities.

But with Crawford it is never clear whether he has in mind a term or a concept, whether he is describing the use of 'self-determination' in international court rulings or making a claim that self-determination is truly not a possibility among Africans wishing to secede from African rule, or Europeans from European rule.

Differing from Montevideo, Crawford believes that the capacity to enter into relations is mostly restricted to states, but not entirely; and it is a consequence, rather than a criterion, of statehood; but if that is so, it is clearly a consequence of other things as well. Crawford's view is valid to the extent that international relations includes the ability to effect the agreements made. According to him, capacity as a criterion makes sense only as conflation

of (competent) government and (actual) independence. The latter of these he now declares, forgetting previous statements, to be the central criterion, as well as "the basic element of statehood in international law" [p48]. He begins with the Island of Palmas case, in which independence is explicitly a right, not a fact. His own remarks are not explicitly about formal or actual independence. Independence (presumably actual) is more important in the creation of a state than in the continuation of a state; a state may retain legal existence "despite lack of effectiveness" [p49]; though the claim is always dependent on context. He makes yet another terminological distinction, between 'independence' "as a criterion for statehood" and "as a right of States". [p49] Illustrating the muddle that is international law, he cites the Austro-German Customs Union case as the " 'leading case' on independence" [p49]. The court in that instance ruled that Austria was prohibited from entering a customs union with Germany because the Treaty of Saint-Germain and the Protocol of Geneva prohibited it from alienating its "independence" without the approval of the League (of Nations) Council, and that while a customs union did not actually inhibit independence, it was an arrangement "calculated to threaten independence" [p50], which Crawford here interprets as economic independence. Hence, the court was abrogating the political independence of Austria that actually existed in order to preserve the economic independence of Austria as a legal perception, even though, says Crawford, the court's majority implicitly deemed all aspects of independence indivisible.

Jackson, highlighting different uses of the term 'sovereignty', distinguishes "positive sovereignty" and "negative sovereignty". The former is the effective control that allows a government to do as it wishes; it has the power to do so and no other power is effectively contesting this. The latter is the result of franchise recognition and the principle of non-interference it entails. Unrecognized governments lack negative sovereignty; they are not protected by the right of non-intervention. On the other hand, they exist because of positive sovereignty; they protect themselves.

Jackson outlines the process of decolonization, based on international liberalism, and the creation of many "quasi-states" with full juridical statehood but not full empirical statehood, which is to say negative sovereignty but not positive sovereignty. When he goes into detail on sovereign statehood, the description initially seems empirical; but he then attempts to refashion 'sovereign statehood' as a juridical term and concept, and suggest that confusion

has resulted from those who have used it empirically. In his view, 'independence', 'imperialism', and 'colonialism' are also such terms. Jackson often uses 'sovereign state' as though 'sovereign' had no meaning but to modify 'state' to describe the artificial juridical entities of Westphalia.[47]

By the nineteenth century, in Jackson's telling, Europe was powerful enough to impose its Westphalian state system on the world, in the form of sovereign states and dependencies.[48] States of Europe and the European diaspora were presumed to meet the Westphalian standards, but for non-Western states, empirical evidence was required. The criteria he cites are very similar to Montevideo. He speaks of

> positive international law which recognized empirical criteria of sovereign statehood: a delimited territory, a stable population, and most importantly, a reliable government with the will and capacity to carry out international obligations. [p61]

We can see how, under this view, a Somaliland is trapped. Somaliland is coextensive with British Somaliland, briefly independent in the early post-colonial era, and the only Somali territory to achieve long-term stability since the chaotic collapse of the régime of Mohamad Siad Barre. Somaliland has even developed a democracy. But despite the democracy and the stability of Somaliland, and the warlordism and chaos of the rest of Somalia, Somaliland has never had its effective self-rule recognized. Among its perceived international obligations is submitting to the recognized administration for all of Somalia, however constituted, and as it does not have the will to submit to that administration, it circularly fails to obtain recognition of statehood.

Though Herbst speaks of the fictions of the post-colonial political landscape, he fails throughout to develop a clear terminology for a non-fictional discussion of governmental control, to contrast with the many fictional terms. He seems to recognize the problem with modern "states" and the Westphalian system, but never successfully moves the discussion decisively into empirical political geography. 'Sovereignty', 'formal', 'authority', and 'control' are all used ambiguously. 'Power' is not used when it would be most helpful. He says, for example, that "Europeans did not manage to exercise formal authority for decades after

47. This is, to be sure, a common practice.
48. Likewise Europe imposed the principle of "extraterritoriality" — Europeans abroad were entitled to European standards of personal and economic liberty. Though this might have been extended earlier by non-European states as a courtesy, it was now demanded, and conceded.

technically gaining control of the territory." [p78] 'Control' is typically a stronger word than 'authority', and 'formal' would in this context usually suggest some sort of departure from reality (as it does for Crawford), but here 'technical' serves that purpose, and 'formal' is actual. He says elsewhere that "formal control" is dependent on the ability to broadcast power. Here 'formal control' is empirical, as it is in the statement "African states lacked the capability to formally control large amounts of land" [p42]; but when he speaks of the "formal political center" and "formal European rule" he clearly means anything but empirical control.

On the other hand, when he says that "precolonial African societies unbundled ownership and control of land" [p40], our first reaction might be to question what 'ownership' means without control; but as he later refers to "ritual control", and even later contrasts 'possession' with 'control', it suggests that perhaps 'control' is the fictional term in Herbst's dichotomy. Then, finally, he offers the formulation:

> Formal political control in precolonial Africa was difficult and had to be earned through the construction of loyalties, the use of coercion, and the creation of an infrastructure. [p41]

While the tools described strongly point to empirical statehood, we cannot be sure this is what he means; juridical statehood is also "earned", and, in some traditions, it is earned by proving empirical statehood.[49]

However he phrases it, Herbst asserts that the Westphalian system entered Africa in factual mode: European powers were required to exercise "effective occupation" before they would be recognized as masters of a territory. (That this was then recognized as a right to rule is a different matter.) When discussing the Scramble (which Jackson astutely calls an "international enclosure movement"), Herbst leaves plenty of empirical-juridical ambiguity, while demonstrating (such as in the Berlin declaration) that the European powers were doing the same.

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49. James Hooper and Paul Williams propose that currently-unrecognized empirical states might earn (juridical) sovereignty through good behavior, but without proposing any retroactive application to the currently-recognized states. Most of them were granted the franchise in the old way, through actual control, and have exhibited anything but good behavior. Herbst is among those who favor a retroactive application of behavioral standards in the most egregious cases of state abuse.

> The disjuncture between power capabilities and extent of empire was possible because, under the Berlin rules, formal European rule could mean almost anything the European capitals decided. [p76]

His discussion on colonial rule says much about the limitations on European rule — that, in fact, the European powers were not ruling much of what they were said to be ruling, even if Herbst does not say this explicitly. Turning to the post-colonial era, and responding to Jackson, Herbst correctly points out that empirical statehood did not end with decolonization; rather, it was already absent during the colonial period.

Herbst is wrong to classify villages, city-states, nation-states, and empires as fundamentally different forms of state or government. These are differences of size only. Of course, it is possible to distinguish a nation-state from an empire if the former is a voluntary association of all and only those who identify with a particular ethnic or cultural group (as a "nation"), and the latter is in some way formed through conquest of one such group by members of another. But this is clearly not Herbst's usage. When he writes about choices made by African rulers ("leaders", as he misleadingly calls them) in the post-colonial era, he asserts that they were denied any organizational choice but the "nation-state". But, with the addition of fixed boundaries, how could the Zulu and Ashanti empires not figure into the Westphalian system? The nominal nation-state is *not* the only form of organization within Westphalia: there have been, nominally, empires, federations, and a union of soviet socialist republics, not to mention sundry kingdoms, principalities, emirates, duchies, and the like. So here, perhaps, Herbst has started using 'nation-state' instead of 'sovereign state', simply to designate a Westphalian entity. But why couldn't the Zulu and Ashanti empires be reconstituted as Westphalian entities? It would seem odd indeed for Austria-Hungary, to take an obvious example, to be excluded from the Westphalian understanding, even though it was nothing like a nation-state.[50]

Caporaso questions the dichotomous nature of concepts like sovereignty, proposing a continuum instead. The components associated with sovereignty should be treated

50. Murphy is one person who uses the term 'nation' carefully and traditionally, to refer to a group united by culture or identity. "The supreme expression of the tendency to define societies largely in political-territorial terms is the modern state, a political-geographical unit conceptually rooted in the ideal of spatial congruity between cultural groups desiring control over their own affairs and sovereign political territory." [1989, p412] This allows him to discuss state-manufactured nationalism accurately: "the leaders of countries from Argentina to Zimbabwe present themselves as representatives of the Argentinean and Zimbabwean 'nations', respectively." [2002, p195]

separately, he asserts, not as inherently-connected elements. For this he cites Stephen Krasner (1999), who says that seldom do states have all four of territory, recognition, autonomy, and control, and that the four uses of sovereignty are "control over borders, external recognition, ultimate right to decide, and capacity to exclude external authority structures" [p10 in Caporaso]. Caporaso himself posits a matrix of two dichotomies, one between power and right or authority (previously defined as the "recognized right to rule"), and the other between inside and outside of the state's home territory. Thus, there are activities associated with actual power that are outward directed, and those that are inward directed; and there are activities associated with authority that are outward directed and those that are inward directed.[51] But while outward-directed authority activities are all tied to the franchise (id est, legitimacy in the international system), inward-directed authority activities are at least partially tied to the internal view of the state's legitimacy, which may be influenced by the external view, but in large part will hinge on the state's behavior with respect to the populace's needs and desires.

As perhaps an unwitting illustration of Caporaso's contention that sovereignty and its relatives are not absolute, he first remarks that the European Union, through rulings of the European Court of Justice, supersedes some acts of the British parliament and therefore moves from a "classical international organization" governing state relations to something more like a domestic authority governing individual relations, and he calls this a loss of parliamentary sovereignty. But he later effectively admits that parliament has not lost sovereignty; that it can reclaim its former supremacy by repealing the Accession Act of 1972 and withdrawing from the EU; and later still disputes the significance of this power.

Territoriality

Because this study is an exercise in political geography, it is reasonable to confine ourselves to the relationship of political control and space. For that reason, in this study a *government* is an organization for the control of territory, and the persons and resources thereon.[52] For Caporaso, this is one possible use of the word 'territoriality': political control

51. The inside-outside distinction is, in itself, identical to the internal and external as used by Martin Wight to clarify sovereignty.

52. While the definition is being employed for technical purposes — to establish a technical term that can be adhered to throughout this analysis and thereby avoid the terminological issues discussed throughout the

that is inherently the organization of space, rather than of individuals, whether by ethnicity or belief. Another understanding of territoriality is the division of the world into discrete, non-overlapping units of physical control. This is one sense employed by Agnew (2005):

> Modern political theory tends to understand geography entirely as territorial: the world is divided up into contiguous spatial units with the territorial state as the basic building block from which other territorial units (such as alliances, spheres of influence, empires, etc.) derive or develop. [p441]

Agnew (1994) has spoken of a territorial trap, though the main element of the trap is the overloading of social features into a spatial container. Nonetheless, he raises concerns about the general territorial assumptions regarding statehood. Herbst takes this concern into the familiar territory of Africa. In his view, pre-colonial polities in Africa were not oriented around territory, which was plentiful and thinly populated. If this is true, and if government is taken as an organization for the control of territory, then there were no governments in pre-colonial Africa. This conclusion would to Herbst appear as a serious comparative failure, and call the definition into question; does it account for all cases? But Herbst's political history is not incompatible with a territorial definition, such as a network of settlements. If states were for the control of *persons*, then how is it that persons were able to get up and move? And why would they bother, if the rule would simply follow them? The answer seems to be that the influence of a ruler extended only so far *in space*. The ability of escape would have reduced the power of the ruler; but then Herbst's evidence points to the fact, not that African rule was not territorial, but that it was not absolute. This limited rule should be compared not with modern democracy, or more specifically constitutional liberalism as Fareed Zakaria would have it, but with the feudalism of the Magna Carta.

Furthermore, land may have been comparatively low in value, compared to Eurasia. But just as African land was worth less to defend, it was also worth less to attempt to seize, which lowered the cost of defense. Nonetheless, low value is not no value, and land remained scarce, so it would settle quickly at a (low) stable value.

The Zulus, says Herbst, claimed "that their authority extended everywhere people had pledged obedience to the king, rather than to the kind of clear territorial claims to which the

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analysis — the definition is not meant to depart from common usage. Obviously there are broader uses ("student government", "governing mechanisms"), but the primary use of 'government' in English is for the state administrative or control bodies that establish positive law, and enforce it; and *these* are inherently spatial, as argued in this section.

whites were accustomed." [p40-1] But this is surely just colonization, and the Zulus simply empire builders, not content to limit themselves for all time by a fixed line, a sentiment the Europeans would understand perfectly well.

Herbst notes that rulers controlled territory more in the core, and less in the periphery, unless, like the Ashanti, they had the infrastructure (roads, specifically) to project their power. This is also a commonplace, past, present, and future.[53] Speaking of his "formal control", he says that it is dependent on the ability to broadcast power; and here, again, he is using 'formal' in the sense opposite from Crawford's.

> Without such infrastructure, African states lacked the capability to formally control large amounts of land beyond the center of the polity because they could not project power in other ways. [p42]

He encourages the recognition of "much more nuanced and subtle possibilities of shared sovereignty" [p55]. But, strangely or not, he offers another model for parts of Africa:

> At the other end of the spectrum, in some areas of Africa, it was so difficult to broadcast power that there were, e[s]sentially, no centralized political organizations above village level. Although African historiography has shown a profound bias against studying stateless societies, there were areas, such as Eastern Nigeria, where the broadcasting power did not extend beyond each individual village. [p49]

And later: "If no state could extend authority of any type into an area, then a vacuum was tolerated and decentralized villages were left to govern themselves." [p56] But this, if true, makes each individual village a state in itself, not, as Herbst has it, part of some larger stateless society. As Herbst is a champion of comparative rigor and of treating unfamiliar states as states nonetheless, his failure to recognize, or even his dismissal of, these small village-states is a puzzling departure.

Comparing pre-colonial Africa to the coming European system, Jackson says:

> Territorial states also make possible orderly and lawful international relations between juridically equal, mutually recognized and therefore independent governments. Old Africa more closely resembled a world of suzerain-state systems which operate on the principle of dependency and tribute between unequals. There

53. Because infrastructure remains so important to the extension of power, the distance from the center should be measured not in Euclidean distance but along a cost-weighted network. A fugitive should not necessarily attempt to get as far from the center as possible as the crow flies; the state will often have a strong presence at the border, but a fugitive who leaves the roads to hide in the wilderness may put the state effectively out of reach. John Allen would speak of the state as being "more, or less, present" at various points.

> often were no firm borders at the periphery and tribute could be paid to more than one suzerain at the same time. [p69]

These remarks are problematic. First, states in Africa were territorial, in some senses; the notion that permanent non-overlapping political regions are necessary for orderly and lawful relations between states is unsupported. That states are independent if or only if they are juridically equal and mutually recognized is likewise unsupported. And the description of unequal partners and governments owing tribute to more than one state overlord is the empirical situation of the present; debt service, for example, is tribute paid for a previous economic besting. Present in Jackson's critique is the idea that states, to be meaningful, must have fixed territoriality. He allows the Greek city-states to count. He is doubtless aware that European states undergo border changes with some historical frequency. He is therefore arbitrarily excluding African states because their territoriality was fluid *at a particular time scale* — or for no reason at all.

When Herbst considers the African demographic realities and the Westphalian political realities, he finds fate where he ought to find design:

> Again, the demography, ethnography, and topography of Africa made it extremely difficult for new, more "rational" borders to be established. The African nationalists did not advocate returning to precolonial practices because they knew that precolonial practices had nothing to offer them when thinking of how to rearrange "Kenya" or "Guinea." [p103]

When rearranging "Kenya" or "Guinea", this may be true. The "African nationalists", by which Herbst apparently means the élites who took over after decolonization, generally with only a temporary employment of democratic practice, would naturally have been reluctant to lose their fiefdoms. But the point of rationalization was surely rearranging Africa *without* "Kenya" or "Guinea". And it is hard to believe that urbanization had proceeded so little since pre-colonial times that no refined ideas of territorial organization could be produced. In any case, rearranging by cultural area would be a small challenge, but only a small one.

At one point, Herbst seems to endorse territoriality as a feature of effective polities:

> There is no better measure of a state's reach than its ability to collect taxes. If a state does not effectively control a territory, it certainly will not be able to collect taxes in a sustained and efficient manner. [p113]

The implication is that pre-colonial African states could not derive revenues from their polities unless they could control their territories, which would contradict Herbst's specific

point. His broader point, of course, is that pre-colonial Africa contained meaningful and recognizable states, not anomalous entities to be disregarded. He is making the case that pre-colonial African states are states because states need not be territorial. As it happens, the states he describes can and should be fit into our framework of understanding, not because states need not be territorial, but because these states *were* territorial. They must have been.

Herbst has not provided evidence to the contrary, and other examples fail to serve as well. Voluntary adherence to, for example, a religious organization is not in the spirit of ultimate coercive influence here intended for government. If the adherence to that religious organization is not voluntary, and the individuals concerned cannot rely on the protection of the territorial authority, then that authority cannot be said to govern the territory; and if the religious organization's decisions are supported by the territorial authority, then the former organization must be considered a part of the governmental structure. If Herbst is right, that states in pre-colonial Africa had no basis in territory and made no point of controlling it, then there were, in this sense, no governments in pre-colonial Africa. It seems more likely, though, that there were governments in pre-colonial Africa, which existed for the control of persons and resources, and the territory on which they existed. This amounts, commutatively, to the same thing as governments for the control of territory, and the persons and resources on the territory. A similar formulation is appropriate for other pre-modern systems in which land was less valuable.

Franchise without control and control without franchise

Jackson's concern is with the present-day entities, notably in Africa, that possess negative sovereignty but not positive sovereignty. These, as discussed before, he terms 'quasi-states'. They arose through the process of decolonization and the suspension of whatever standards of empirical statehood had ever been applied.

> It was of course impossible to point to any uncontestable criteria of empirical statehood for determining independence that would satisfy those for whom colonialism was becoming unnecessary and illegitimate. [p94]

Since precedent had not been established in the field of decolonization, decolonization could not be made to wait on a particular standard of political or economic development. In other words, getting the Europeans out of Africa was a pressing moral imperative, nodding

towards their sovereignty (again, right to rule) a moral obligation, and preserving the integrity of the state system by insisting that the newly-sovereign entities demonstrate the empirical abilities otherwise associated with states was simply not of comparable value, particularly as colonialism was itself often a departure from empirical rule. Extending the sentiment, international and certainly African opinion began to see financial assistance as a right. This Jackson calls "international affirmative action", making a direct analogy to affirmative action and its sense of reparative justice, treated as a right (with an expected expiration) for states not *yet* able to play by traditional rules of politics and economics. This affirmative action was to include not just grant aid but preferential rules, such as for trade. The underdeveloped, including debt-ridden, entities involved are strongly but not explicitly associated with quasi-states. Jackson notes a moral ambiguity of assistance to states — there is no certainty that the aid will go to needy individuals, and behind this is the implication that middle and lower middle income persons in developed states may end up subsidizing the lavish lifestyle of the élite in underdeveloped aid recipients. But beyond the graft, Jackson correctly sees negative sovereignty as a tool of repression. States are frequently perpetrators of crimes rather than protection against them; "the Third World state is usually the possession and instrument of elites who often act as if sovereignty is their licence to exploit people." [p140] The value of the franchise was therefore a source of violence and instability:

> Countries such as Chad and Uganda amounted to little more than violent arenas where rival ethnic warlords preyed upon innocent bystanders and laid waste to the countryside in a perennial struggle to seize control of a nominal state represented by the capital city. [p149]

Jackson is rather optimistic about growing First World awareness of human rights violations in the Third World, given the strong tendency among First World activists, in 1990 no less than today, to defend and rationalize anything emanating from or taking place in the Third World. Jackson himself recognizes the practical difficulty for white critics of black régimes; they are quite likely to be accused of racism, as the example of Robert Mugabe demonstrates.

Jackson notes the existence of rebels with de facto control of some territory, but which are denied recognition without the consent of the capital, which is to say the franchise holder; he correctly predicts that the empirical state in Eritrea will not receive recognition until Addis Ababa consents (as it did following the capture of Addis by Meles Zenawi, an ally at that time of the Eritrean commanders).

Jackson is surely right to conclude: "Juridical statehood is only a façade: quasi-states are tolerated by real powers only because nothing vital is at stake." [p169] If something vital is at stake, the real powers intervene.

By explicit contrast with Jackson, Scott Pegg has concerned himself with entities that possess positive sovereignty but not negative sovereignty. Pegg recognizes the term 'state' in its empirical sense, and accordingly applies the criteria of territory, population, and effective government in using the term. But while 'state de jure' and 'state de facto' would, in plain language, be synonymous with 'juridical state' and 'empirical state',[54] Pegg's '*de facto* state' is a small subset of the latter. It is, in fact, a small subset of the unrecognized empirical states.[55]

> A *de facto* state exists where there is an organized political leadership which has risen to power through some degree of indigenous capability; receives popular support; and has achieved sufficient capacity to provide governmental services to a given population in a specific territorial area, over which effective control is maintained for a significant period of time. The *de facto* state views itself as capable of entering into relations with other states and it seeks full constitutional independence and widespread international recognition as a sovereign state. It is, however, unable to achieve any degree of substantive recognition[56] and therefore remains illegitimate in the eyes of international society. [p26]

Pegg clearly has a very limited class of political entities in mind here, essentially would-be sovereign states that, in lieu of recognition, have other arguments to make (in the counterfactual world described by Crawford in which a state might be recognized on the merits). Pegg makes specific nods to the Westphalian system, and particularly to Montevideo; indeed, his *de facto* state must wish to participate in the Westphalian system. Being denied, it must go beyond the Montevideo requirements in specific ways: it must have popular support and provide services; it must have secured a territory "for a significant period of time", which he later clarifies as two years; it must have a "political", as opposed to a monetary, motivation.

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54. The de jure/de facto distinction is, like so many other terminological issues, not as clear as we might hope. Kolossov and O'Loughlin speak of "*de jure* borders" and "*de facto* borders", but the former seem to include *all* political and administrative lines, while the latter apply to "ethnic, linguistic, cultural, or 'civilizations' " [p265] borders.

55. These, again, are the entities that possess positive sovereignty but not negative sovereignty, which O'Loughlin calls 'pseudo-states'.

56. So central to Pegg's concept is substantive non-recognition that he excludes from the category of *de facto* state the Kurdish safe haven of 1991-2003, simply because of its ambiguously-superior legal status.

Pegg's avoidance of the term 'government' is curious. His 'organized political leadership' is in power, controls territory, and is (as he says later) "in the business of providing governance" [p27]. It can only fail to be a government in the sense that a government must be legitimate in the eyes of the Westphalian club.

He specifically excludes "control by local strongmen" [p28]. When discussing bandits, he states that the leadership of the *de facto* state must not be about "profit, plunder, or taxes" [p29]; this non-monetary requirement is a standard far beyond that applied to the present recognized states, which, as he knows better than most, are frequently controlled by organizations whose motives are entirely about profit, plunder, and taxes.

Pegg recounts the international legal definitions of 'rebellion', 'insurgency', and 'belligerency'. A rebellion so defined lacks effective control, as it is containable by the recognized government's armed forces. An insurgency is perhaps not containable, but has not yet led to effective control. A belligerency, on the other hand, is in fact an effective government; perhaps the reason Rosalyn Higgins cannot find much use of the term any longer is because such use requires (in international law, anyway) neutrality between the belligerency and the recognized state, and this conflicts with the Westphalian preference for members of the club.

On the question of time, Pegg recognizes that he is drawing an arbitrary line to taste. Ten years is plenty long, one month is not long enough. Such a standard might be appropriate if we are drafting a list or a map for publication and the result is intended to describe the world *as is* for long enough to suit the readers. But a government that governs for one month is an important historical fact. If we were describing the state of the world during that month, we would be right to include this government, and we could not be certain, despite its novelty, that it would prove fleeting.

The goal-oriented distinction — that a *de facto* state seeks recognition of its independence — moves us away from empirical standards. Pegg provides the example of the Eastern Kasai region in the recognized Congo-Kinshasa, which, at publication, he judges to be effectively independent of Kinshasa, but not claiming independence or agitating for it. The goal in this case can only be identified through pronouncements. It is reasonable to assume that the local government of Eastern Kasai *did* wish for true independence, in the sense that it wished to govern Eastern Kasai itself, without reference to Kinshasa. If it has effective self-government, but we do not recognize this as self-government because the government does

not admit to its status, then we are favoring political posturing (however motivated) over political reality.

Because the goal-oriented distinction pointedly excludes armed activities aimed at seizing the whole of a recognized state, we are left with the possibility of a stand-off of many years, in which two governments, each controlling a part of a recognized state and claiming the whole, are treated as one state, with one government and one rebellion. This would seem to apply to Korea; even though neither North Korea nor South Korea was admitted to the United Nations during the Cold War, each was surely a state in empirical terms. The same holds for Taiwan and the People's Republic of China, each laying claim to the sovereignty of "China". Pegg's classification of Taiwan as a *de facto* state is meant to distinguish it not from some lesser political entity, but from an actual sovereign state, as he notes how close it comes to meeting the legal definition. For most of Taiwan's independence, though, it has been governed by the Nationalist Party, which has pointedly not sought recognition of its independence. And for decades Taiwan was recognized as the government of all China.

When Pegg contrasts puppet states with his *de facto* states, it is not clear why popular support is emphatically mentioned. Surely the key matter is simply control. A puppet state is a pseudo-independent entity controlled in fact by a supposedly-exterior power. That alone distinguishes it from the *de facto* state, as well as the state de facto. Crawford makes the same qualification, claiming of the puppet state that it would lack "the support of the vast majority of the population it claimed to govern" [p65].[57] Lack of democratic support, though, is a characteristic of tens of recognized sovereign states of the present day. The question of popular support is far too romantic to be included in a discussion of real-world governments.

Similarly, prematurely-recognized post-colonial entities are mentioned. These entities were recognized for political (and purportedly legal) reasons, having nothing to do with empirical statehood. That they lacked empirical statehood immediately excludes them from Pegg's category of *de facto* states. And when Pegg contrasts peaceful secession movements with *de facto* states, the key fact again is the lack of empirical statehood. A peaceful secession movement whose aim is accepted by its parent government is not a *de facto* state because,

57. By Crawford's empirical criteria for a puppet state, Monaco would qualify: "that in important matters it was subject to foreign direction or control; that it was staffed, especially in more important positions, by nationals of the dominant state" [p65]. Crawford nonetheless considers Monaco a state.

given the consent of the parent government, it becomes a sovereign state (compare Crawford's discussion of Congo-Kinshasa separating from Belgium). A peaceful secession movement whose aim is not accepted by the parent government is not a *de facto* state because it never achieves self-government. The *de facto* state is meant to occupy some of the space between the entity clearly possessing both empirical and juridical independence, and the entity clearly lacking them. The peaceful secession movement can only occupy one of the extremes.

Pegg recognizes that he is writing against the current of modern political developments:

> The fact that 'the juridical cart is now before the empirical horse' (Jackson, 1990, pp. 23-24) makes the *de facto* state's ability to meet the traditional criteria for statehood worthless in today's international society. [p48]

Pegg cites Jackson (1993) regarding the transformation to a juridical system in which might no longer makes right; Jackson believes that scholars have failed adequately to take this into account, relying too heavily on theories based on "historical power politics". But, outside the sentiment in a few corners of Europe, it would be hard to see that the present system yields anything even to a grossly-distorted sense of right and wrong, or even legality. Pegg and Jackson are right that the post-war system of sanctified territories is a fundamental and powerful shift; but the juridical state system is simply a new manifestation of historical power politics.

Government-defined regions and borders

Political geography is perhaps the premier example of our tendency to proceed from *where* to *what*. We establish a spatial extent, call it a state, and then declare some organization within it the government of the whole. In order to place *what* before *where*, we need first to locate those entities that are actually governing, and then determine the extent of space over which they are governing.

Jackson matches Crawford's formal and actual independence with negative and positive sovereignty. Pegg mirrors Jackson's quasi-state with his own *de facto* state. But the latter is a very limited category of empirical states. At a minimum, these entities need to be reincorporated, for purposes of study, with all of those entities that are states de facto in the common sense. The bulk of these are states that, in contrast to Pegg's definition, are fully

recognized as states. It is also crucial to remove any sort of judgement about means or motives. All organizations that control territory are governments, regardless of how they see themselves or how they are seen by others.

In other words, the state that should concern us is the empirical state. The sovereignty that should concern us is positive sovereignty. The independence that should concern us is actual independence. We can capture all of these characteristics by first identifying the governing entities — the *what* of our quest — and then proceeding to describe these entities in geographical terms.

While the main indicator of control is indeed approximately Weber's monopoly on force, or more precisely Janice Thomson's policing, defined as "rule making and enforcement authority" [p213], ancillary information such as taxation can be a secondary indicator, since the effectiveness of rule enforcement can be seen clearly in the degree to which government prescriptions determine the practical political situation in a territory.[58]

For the purposes of this analysis, governments are defined as organizations for the control of territory, and the populations and resources thereon, and are considered governments only to the extent that they in fact wield such control. Excluded, therefore, are organizations that intend to control territory but do not, and organizations that wield control over persons or resources divorced from territorial control.[59] For 'government', we could as well say 'system of governance'; our present understanding of governments may overlook many elements of the system that makes governance possible, and if an element within a territory is a significant contributor to the control apparatus, it must be considered as part of the government. However, contributory systems such as that existing presently in Iraq are best seen as two independent organizations that, operating simultaneously, create the governmental situation in certain places, since each controls some areas by itself, and the fundamental identity of the United States government, to take one of the participants, is not changed by the fact it exercises exclusive control in some areas and shares it in others.

The scheme of classification below is meant to be both a posteriori and a priori; it is meant to address the situations existing in the world, past and present, but also to include possible situations that have no practical example. Where existing situations are concerned,

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58. Here we might return to the words of Herbst: "There is no better measure of a state's reach than its ability to collect taxes. If a state does not effectively control a territory, it certainly will not be able to collect taxes in a sustained and efficient manner." [p113]

59. If such control can be said to exist. See again the discussion of territoriality above.

the information derives primarily from journalistic reports on political control throughout the world.

A political border in the empirical sense is the place at which one political situation gives way to another, where the reality as determined by government changes from one state to another. While the conventional country model of geography, the Westphalian system, would generally suppose the abrupt transition from a zone controlled solely by one government to a zone controlled solely by another government, there could well be a smooth transition to a zone controlled by two governments or no government at all.

If borders demarcate the functional limits of territorial control, then one notion emerges immediately from the examination of existing borders, particularly in problem cases. It is best to think of political borders not as the boundaries of areal features, but as independent line features. They exist where, and only where, it is possible to identify the extent of control by at least one party. It is not necessary for consistent control to exist on the far side of the border.

While borders in this scheme are no longer viewed as divisions between independent political realms, those borders that can be identified will still often wholly enclose a territory. But a completely-bounded territory formed in this way would not necessarily contain a single government; it might well contain numerous governments, with different border segments controlled by different governments. In some cases definable border segments could even exist within that bounded territory, with one end or both ends unconnected to any other border segment.[60]

A political region, therefore, can be a hybrid between a bounded region and a radial region. Certainly power radiates from a center, as Herbst has it, and weakens over distance; but at the same time, an effectively-controlled border, where one exists, marks the limit of that power.

Human society exists on land, and land is the primary locus of physical political control. While control of water, its expanses and its resources, may be attractive as well, the ability of governments to control water is much lower. A fixed barrier at sea is theoretically possible, but any such barrier would either be affixed to land adjacent to the water or affixed to the

60. Here the reference is not to governments sharing control over a particular region, but distinct government territories where the precise border between them is not known.

sea bed and extending to near the water's surface, making it practical only near land. Patrol of waters is likely to be far from perfect, even for the most robust maritime force. Because of the differences in control on land and water, the transitional point between them deserves to be a category in itself. Considering a border as the place at which the governmental situation changes, there is a fundamental difference between the sort of transition that is possible on land, the sort possible in water, and the sort possible where land gives way to water. Water in this case especially refers to the open sea, but waterways have the same properties: fixed territorial control usually exists up to the water's edge, and not beyond.

On land, fixed barriers are possible, and of two kinds, natural and artificial. Natural barriers are topographical features that present a clear and defensible transition from one territory to another, with ridgelines being perhaps the most likely. Artificial barriers are items such as walls and embankments that similarly demarcate territory and facilitate its defense. While such devices as minefields may defend a territorial extent by themselves, in general artificial barriers, like natural barriers, are *places* of physical control, not self-contained *means* of physical control.

Returning to the definition of a political border — the place where the reality as determined by government changes from one state to another — gives us another distinction among types of border. While much of the above might suggest a border that is physically sealed and through which the movement of persons and resources is micromanaged by the government, this closed border can be contrasted with an open border. An open border differs from no border in that the government of an open border does indeed hold mastery of the territory within the border; it chooses not to prevent or perhaps even monitor the entry and exit of persons and resources. For this situation to be possible, the location of the border must not be physically contested. This in turn requires that a competent government, in the empirical sense, exist on the far side of the border, controlling the other side in the same way, and agreeing to the location of the border, and to the division of territorial jurisdiction. The Schengen Agreement in Europe provides a good illustration of this concept. The crossing of the German-Austrian border is not controlled, but there is little doubt that in the empirical sense the German and Austrian governments control the territory on their respective sides of the border and determine the laws that are applied; and there is agreement between the two governments as to which of them is entitled and required to maintain order in the areas surrounding the border. However, while an open

border requires that a competent government exist on the far side and agree to the border's location, the other government need not also leave the border open. It is possible that one government would monitor and control the border and the other would not, so that, for instance, moving from the first territory to the second would involve passing through customs controls, but moving in the opposite direction would not. This was until recently the case with the border between Switzerland, then not a member of the Schengen zone, and Schengen members Germany and Austria, where Swiss authorities imposed checks on those entering, but German and Austrian authorities did not.

A final quality of borders that should be considered is stability. There is a clear difference in degree between a border segment that has existed for five hundred years, and one that has existed for two. Our expectations about the former border segment can be much more confident: it will exist for some time to come, and will change in nature gradually, if at all, and only with the consent of the government. The latter border segment does not inspire confidence. Not only would we reasonably doubt that it will endure in its present form, we would even be justified in doubting its location and perhaps its existence.

Where identifiable borders do not exist, identifiable control may exist nonetheless. Looking especially at human landscapes where the population is concentrated in settlements and sparse in between, we can speak of the territorial control as following the human settlement pattern. Control ceases where settlement gives way to unsettled land; the control is inherently linked to the human population.[61] The transition from settled to unsettled land is similar to the transition from land to water, with the exceptions that it remains possible to create fixed barriers on land, and that land-water boundaries do not generally change, whereas human settlement is typically expanding continually into unsettled land. If there is a definable limit to human expansion, then we have a natural fixed barrier on land and presumably a definable border.

While this human settlement control can apply to the traditional city-state, as well as some examples of modern warlordism, the main application today is not to single

61. Despite similarities in phrasing, this is not a repeat of Herbst's idea of non-territorial control over population. Herbst is attempting to separate control over population from control over the territory that the population occupies — when in fact, one implies the other. If land is not particularly valuable, as in Herbst's precolonial Africa, or the unpopulated hinterlands of Arabia or East Africa described here, control will focus on occupied land, and may not be pursued elsewhere. The limits of human population settlement determine the limits of territorial control; but territorial control exists nonetheless.

settlements, but networks of settlements, where settlement control is clear, but hinterland control is limited or unknown. Limited hinterland control would be common in desert landscapes such as Arabia; unknown hinterland control would be common in conflict areas such as eastern Africa.

Transitional to a discussion about symbolization, it is important to note that a single map does not need to convey all information at once. Even when considering political control there are entities that overlap. While various solutions to portraying this overlap are possible, the best may often be a series of maps. Our guide, again, should be *what* before *where*. The question of where a prominent colonial dialect such as English or French is spoken will return a spatial extent that overlaps with not only countless local home dialects but also native linguae francae, English and French creoles, native dialects used for official purposes, and even other colonial dialects. Such dialects may need to be depicted by themselves. Similarly, in politics we cannot expect a one-to-one relationship between governments and territories, which may point to a complex presentation.

The simplest examples of shared control are those in federal systems. The power balances in the United States and in the European Union are roughly opposite at this point, with the US government being stronger than its components, and the EU government being weaker. But the US states and the EU meet the definition of government; though they do not rule alone, they do help to determine the political reality in a particular territory. However, it is the more powerful government in each case that determines the border for both governments: Alaska's border with Canada is wherever the United States' border with Canada is, and the European Union's border with Norway is wherever Sweden's and Finland's borders with Norway are. In both of these cases the two levels of government act largely in concert.

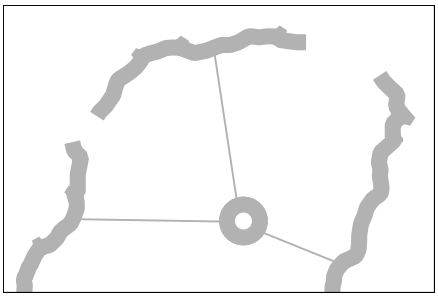
More problematic are areas of shared control such as the West Bank and Iraq. Israel alone controls the area to the west of the West Bank barrier. To the east control is shared with the Fatah fragment of the Palestinian Authority. In Iraq, there are the recognized government, several regional governments in differing degrees of cooperation (extending to armed confrontation) with the recognized government, and armed forces from several governments based elsewhere, most notably the United States. In some portions of these territories we can attribute control to a single government. In other portions we can

attribute control to a composite government, some of whose elements may be sole governments in other parts of the world; but such composite governments are still governments. In the remaining portions of these territories we may not be able to attribute control to a government. In that case, we must return to one of the main principles of this exercise, which is that we should only describe control, and therefore borders, where they can be established empirically. There will be territories where we cannot say anything empirical about control, but this is not the same as saying that there is no control.

Mapping and symbolization

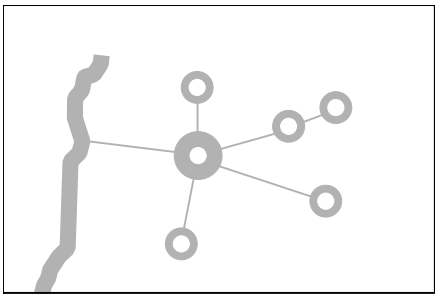
Obviously the primary feature that needs to be mapped and symbolized is the line of control. As mentioned before, the line of control must only be represented in areas where there is a definable change in political control, and it must clearly convey the direction of control. In addition to these lines of control, we have need of three kinds of lines: fixed lines, consensus lines, and reference lines. Fixed lines are fixed barriers on land, as well as land-water borders. Consensus lines exist where two unidirectional borders coincide, and the governments on each side agree on the location. If we wish to note the location of some other line, such as a border that no longer exists, or the line at which a government claims the right to rule but which it does not actually control, we can place a line on the map strictly for reference. Such lines must be clearly distinguished from those which mark actual borders; the point of reconsidering our political geography from an empirical perspective is to ground our maps in testable fact, not unjustifiable assertion.

While it is easier to symbolize in color, a scheme is more useful if it can also stand in grayscale, and the following graphics illustrate how the scheme outlined above could be represented in grayscale. To begin with, the centers of government control, otherwise known as capitals or headquarters, would be marked with a shaded circle. In color schemes, the gray shade could be replaced with various hues, along the lines of the polygon shading that accompanies most color political maps. These centers of control would be connected with tie lines to the lines of control, which would be appear in a color matching that chosen for the center of control, whether gray tone or hue.



Lines of control linked to their center of control.

By tying the lines of control to the center of control, we can indicate the directionality of the borders; there is little room in this image for misunderstanding the nature of the governmental power being depicted. In cases where government operates through a network of settlements, those settlements can be marked with somewhat smaller circles in shades matching the center of control, and also connected to the center with tie lines. And naturally the two systems can be used simultaneously, as necessary.



A line of control and several settlements linked to their center of control.

Black would be used to mark fixed, consensus, and reference lines, so:

Fixed line

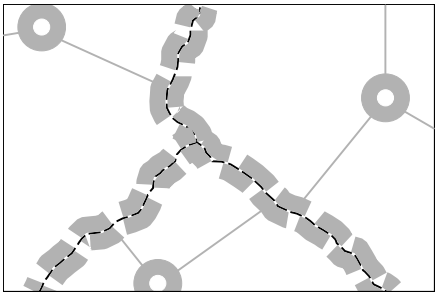
Consensus line

Reference line

The symbolization here is meant to be as transparent as possible. The fixed line is solid and indisputable. The reference line is faint and insubstantial. The consensus line lies in between, reminiscent of traditional border symbolism without the substance of the fixed line.

As noted, the distinction between land and water is significant for human geography, and so the convention of a sharp distinction between land and water symbolization is appropriate; but water features must be distinguishable as well from lines of control, since those will, in some cases, appear at sea. An appropriate choice would be a pale gray. On a color map, blue could replace black for line features at sea, and a pale blue for the pale gray of water features.

Open borders are the rule at sea, and common enough on land in parts of the world, and they represent a fundamental qualitative category of border, so we need a distinctive symbolization. The obvious choice is a broken version of the line of control. As noted before, open borders must always be paired with a consensus line; if there is not a consensus division of territory between two effective governments, then what we have is not an open border, but no border at all.



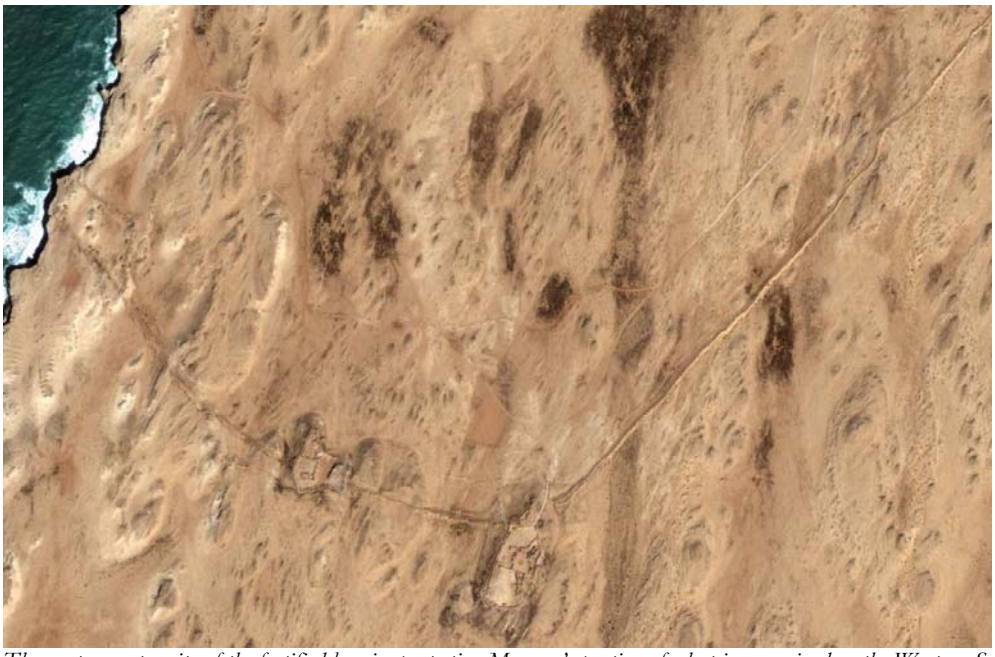
Open borders linked to their centers of control.

Classifying borders on stability would be an arbitrary exercise; any qualitative distinction would be wholly subjective. The quantitative information about the border can simply be noted as a date, generally a year, of first appearance for each border segment.[62] While such information would make the symbolization fairly busy, it would not be required on every map, and would not be busier than a symbolization scheme for even a small number of stability classes.

62. As Harvey Starr's work has shown, the use of GIS is a natural fit for storing information about borders, particularly quantitative information. In this case, the first year of a border segment's appearance would simply be an attribute of the segment, one that could, if desired, be used to label the map automatically, or to assign the borders to classes that could then be symbolized in the usual ways, for instance a color ramp. The latter option, however, would be best used in relative isolation, as when border stability featured as a major theme of the map.

Remote sensing of empirical borders

Once we establish that our goal is the discovery of actual lines of control, we can locate many of these lines of control by examining aerial photographs and satellite imagery. In the four examples below, satellite images show clearly where one government's physical control of the land ends — though not necessarily where another government's control begins. While three of the examples rely on our ability to detect an actual artifact (such as a wall) created for the purposes of control, the last example, at the border between Haiti and the Dominican Republic, following the work of Jeff Wilson, Tim Brothers, and Eugenio Marcano, uses clear differences in land cover and land use to detect changes in political control. In such cases, we are detecting not the means of territorial control, but the results of territorial control. The visible line in the image reveals the place where one political reality yields to another.



The western extremity of the fortified barrier protecting Morocco's portion of what is recognized as the Western Sahara. (Google Earth image from DigitalGlobe)

The barrier wall in Israel controlling against movement from the West Bank. (Google Earth image from DigitalGlobe)

Guantánamo Bay in Cuba, with the line of control between the US and Cuban governments visible. (Astronaut photo from International Space Station, 2003 January 11).

The change in land-use patterns between Haiti and the Dominican Republic. (Landsat ETM+, 2003 May 3)

Morphology

Traditional state morphologies are built on the assumption that states are bounded areas. A textbook example, literally, would be that of Harm de Blij and Peter Muller, who list five types: compact (as Cambodia), protruded (as Thailand), perforated (as South Africa), fragmented (as the Philippines), and elongated (as Vietnam). Herbst points out that such morphologies are greatly deficient for studies if population distribution is not taken into account. It is, he asserts, far more advantageous to have a compact population distribution than a compact external shape. His division of states into small and hinterland territories, and territories with favorable, neutral, and difficult population distributions, is not especially methodical, and accompanied by an unreliable anecdotal discussion. Even when, as with the question of road density, he employs an actual regression, he cannot overcome the limitations of the underlying data, even if we grant the premise that such analyses are best done on the Westphalian territories in an area like Africa where those territories are so far from reality.

Hartshorne, as cited by de Blij and Muller, suggests several types of borders: antecedent, where the border follows previous human patterns (as between Malaysia and Indonesia in Borneo); subsequent, where the border takes shape dynamically with human settlement (as between Vietnam and China); superimposed, where the border is thrown across a

homogeneous or unified human landscape (as between Indonesia and Papua New Guinea); and relict, where a border has been removed, but the effects perhaps have not (as between North and South Vietnam). But this scheme, while it specifically refers to political borders (whether empirical or juridical), is considering them primarily in relation to other geographical information, particularly cultural.

Harvey Starr has attempted to use the power of GIS to perform a quantitative, or at least semi-quantitative, classification on borders. He developed the "opportunity and willingness" framework in previous works and with coauthors; but here (despite the title) uses ease of interaction and salience as his border variables. His classification depends largely on objective measurements derived from the environment (for example, slope, or distance to the nearest airport), though the mix is apparently his own innovation.[63] The analysis he executes fails to support his thesis that inter-state war increases with borders high in ease of interaction or salience, but does find that it increases with length of borders. But the global border database Starr creates is flawed by input; specifically, he uncritically uses recognized borders from the Digital Chart of the World, even though his reasoning clearly applies only to borders de facto. The illustration used in the article, Israel, is equally an illustration of the study's flaws. He is right, though, that GIS is a tool well-suited to quantitative analysis of this sort, and to the storage of relevant attributes of borders.[64]

The examples of Herbst and Starr hint at how far we are from an ability to examine empirical states and borders quantitatively. We can, however, classify borders qualitatively using certain attributes. In this case the attributes outlined earlier divide borders into a fixed number of classes. Each segment of a line of control can be based on a fixed line or not, and based on consensus or not. If consensus, it can be open or not, and if open, it can be reciprocal or not. If the segment is not based on consensus, it can be matched by another line of control or not. Therefore, the possibilities for line segments of control are:

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63. Ease of interaction is gauged with roads, railroads, and the slope of the terrain within a buffer of the border. Salience is gauged with population concentration and the location of the capital city, airfields, and selected cultural landmarks within a buffer of the border. Borders in Western Europe rated particularly high for ease of interaction and salience, though the Ukraine-Moldova border was first. Western European borders are notable in that they are, with the Schengen Agreement, largely open; but Western Europe is also one of the cases where the underlying data are most valid: the juridical and empirical borders coincide.

64. William Wood goes even further, demonstrating the value of GIS not just for the storage of information about borders, but the process of determining borders in the first place. Tóth Katalin and Busics Imre, also state geographers, offer similar insights on the value of GIS to border knowledge. Tóth and Busics are refreshingly practical, as their practice might dictate.

- fixed, consensus, open, reciprocal
- fixed, consensus, open, not reciprocal
- fixed, consensus, not open
- fixed, not consensus, matched
- fixed, not consensus, not matched
- not fixed, consensus, open, reciprocal
- not fixed, consensus, open, not reciprocal
- not fixed, consensus, not open
- not fixed, not consensus, matched
- not fixed, not consensus, not matched

The possibilities for border segments, potentially considering coincident lines of control together:

- fixed, consensus, open/open
- fixed, consensus, open/closed
- fixed, consensus, closed/open
- fixed, consensus, closed/closed
- fixed, not consensus, matched
- fixed, not consensus, not matched
- not fixed, consensus, open/open
- not fixed, consensus, open/closed
- not fixed, consensus, closed/open
- not fixed, consensus, closed/closed
- not fixed, not consensus, matched
- not fixed, not consensus, not matched

The morphology of bounded regions cannot compete with the subjective classes presented by de Blij and Muller, in part because there are twelve classes of border segments and a potentially-infinite number of border segments enclosing each region. There are, however, some (artfully) notable types. Some possibilities for governmental regions (states):

— completely bounded by lines of control
— completely bounded by fixed or consensus lines
— completely bounded by fixed lines
— completely bounded by water
— completely on one island
— on more than one island
— completely bounded by consensus lines
— completely bounded by open borders
— completely bounded by reciprocal open borders
— not completely bounded by lines of control
— without lines of control (that is, simply a network of settlements)

Political regionalization

Much of the empirical work on locating borders has been done already. It has been produced by cartographers and incorporated into the conventional view of the world's "countries"; it represents the Westphalian worldview. With that product in hand the most important work facing us is to remove all of the border symbolization that no longer represents, or never did represent, political reality in the world. If a government does not control the land leading up to a recognized border, then that land should not be associated with that government. When research suggests the presence of an unrecognized government, we should inquire into the location of its center of power and the breadth of its territorial footprint, and depict these when we can. When territory is being physically disputed, we can certainly depict a snapshot if that is important to the point at hand, and if it is convenient to do so, but should feel no obligation to exhaust ourselves in pursuit of the geographic detail. That can come when the situation stabilizes. And if territory is being disputed on moral or political grounds, without any change in the physical situation, we should feel no obligation whatsoever. Interested detachment would be an appropriate reaction. Our responsibility as geographers is to depict facts as they are, not as interested parties want them to be. The world's unresolved territorial claims might make a fascinating thematic map, if only it were possible to condense it into a manageable form.

If we begin with the recognized boundaries of the country model, we can improve our visual presentation by removing depictions of borders that do not exist empirically, or whose existence is notably uncertain. Below, the Horn of Africa, one of the most problematic areas, has been so revised. The empirical governments of Southern Sudan, Somaliland, and Puntland have been added. The juridical borders between Egypt and Sudan, and Eritrea and Ethiopia, have been replaced with empirical borders. The lack of control exerted by Khartoum, N'Djamena, and Bangui over their recognized hinterlands is acknowledged by the absent borders. The desert regions in the Arabian peninsula (involving the recognized sovereignties of Saudi Arabia, Yemen, and Oman), where no borders have been demarcated and no physical control is attempted, are also depicted without lines of control. Finally, the southern and western Somali territories, where multiple contesting entities operate, including the government in Addis Ababa, no control has been depicted, on either side of the recognized Somalia-Ethiopia border.

On the left, the country model; on the right, a partially-refined representation of the political world.

The procedure is largely driven by the availability of data. It is clear from all reports that Southern Sudan (based in Juba), Somaliland (based in Hargeysa), and Puntland (based in Garowe), are effectively in control over parts of other governments' franchise territories. The extent of control, particularly in the case of Puntland, is not completely clear, as Puntland contests its border with Somaliland, and must deal with the volatile situation to its south. But the uncertainty is not to a level where nothing can be said. By comparison, the other governments in cultural Somalia, mostly labeled 'warlords' in the popular media[65], have ever-shifting control. The Islamic Courts Union was developing into a stable government for southern Somalia before Addis crushed it, but even so, its control was constantly expanding, and therefore impossible to depict except in snapshot. With the withdrawal of Ethiopian troops, a new Islamist government may yet emerge, but speculation on a map of this sort is obviously counter to the spirit of the exercise.

The missing borders in the Sudan-Chad-Central African Republic area are likewise a reflection of uncertainty. The recognized governments have some limit to their control; this control generally gives way to a government labelled as a rebellion. If anything, the control of N'Djamena and Bangui is overstated; in the recent past the recognized government of Chad barely controlled the presidential palace in N'Djamena itself. Unrecognized governments exist as well in the Kivu area of the Kinshasa franchise territory, and the roaming Lords Resistance Army (LRA)[66], formerly a government in northern Uganda, is

65. This is not an inaccurate term, though many recognized African heads of government could fairly be called warlords and yet never are. 'Ruler', 'autocrat', and 'dictator' would all be equally accurate, since the size of the government or its armed forces is not relevant. The perceived legitimacy of 'president' or such terms is granted to unelected African rulers far too readily. The previous recognized "president of Somalia" was certainly no more than a warlord, and not a powerful one at that.

66. This organization is also referred to as the 'Lord's Resistance Army', owing to confusion regarding the referent of the first element — the "Lord" of Christianity, or the powerful "Lords" who run the army.

responsible for, at the least, the disruption of control along the Ubangi river, without stably controlling land itself. If it were possible to identify the limits of LRA control at a given point in time, it would still be inadvisable to depict it, so likely is it to change from month to month. By comparison, Somaliland and Southern Sudan have held their respective regions with little effective challenge for long periods of time, measured in years or even decades.

Appendix B is a list of governments and governmental regions in the world.

THE LINGUISTIC WORLD

In language, the conventional is often driven by identity. The speech[67] of any group that maintains a distinct identity, or even that has a distinct identity maintained on its behalf through the application of a foreign name, can be identified as a 'language'. The empirical approach to language would, reasonably, avoid such extraneous considerations and confine itself to linguistics.

Linguistics, in this study, and in the common use of linguists themselves, is concerned with the inherent properties of language, with language in and of itself, as divorced from speaker attitudes. Of course, human language is a human construct. It is not a disembodied force that controls human actions, but rather the product of those actions, of individual choices. Because it is a collective product, the ability of individual humans to influence language is generally limited; but collectively humans determine what it is. But language can be documented. We can have voice recordings and texts, grammars and dictionaries. To the extent that a particular language variety has been well documented, we can study the phenomenon as documented. Such study constitutes much of linguistics. For example, if a researcher finds an ancient inscription, or studies an isolated human group in the field, she may find that the language variety being used is previously unknown to her and other scholars. The language users may consider themselves to be a distinct group without affiliations; and yet we would expect that the researcher would begin considering immediately how this language variety might be related to varieties that are already known.[68] Clues may come from the language group's geographic location and material practices, but the primary concern will be the structure of the language itself. What are its vocabulary,

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67. Not all language is spoken. However, for the hearing population, which is most of the world, spoken language is primary — it is learned first and it dominates language use. Linguistic regions for deaf cultures are generally unrelated to those for the hearing population, existing in a separate stratum that also covers the entire world. Deaf linguistic regions are not dealt with in this study, though they would clearly be a part of any comprehensive study of cultural regions. Written language will be discussed briefly, but is also left primarily for further study.

68. Language changes over time. A given change, for example a new word, becomes part of the broader language as it spreads within the language community. In this way, the language of the entire community changes together. If, however, a language community is sundered, as for instance when a subgroup migrates to another area and no longer communicates with the original group, the language spoken by the two groups will no longer change together; each will undergo different changes, and they will eventually be significantly different. But because the speech of each group originated with a common speech, we say that all of these varieties are related, and that the later varieties of the two subgroups descended from the original. The genetic analogy pervades terminology — 'mother' and 'daughter' languages, and so on.

grammar, and phonology, and how do these compare with the vocabularies, grammars, and phonologies that we are aware of?

While it is true that language does not live apart from its users, and is perpetually in their control whether conscious or not, it is nonetheless possible to separate factors that are extralinguistic. One such factor would be political considerations, such that a speech variety spoken identically on either side of an intergovernmental boundary would be labeled as two separate languages.[69] A dramatic example would be that of 'Bosnian', which has recently emerged as a language in 'Ethnologue', and is, according to 'Ethnologue', spoken by virtually everyone resident in the country of Bosnia-Herzegovina. The map of Bosnian shows it spoken throughout and only in Bosnia-Herzegovina, while 'Serbian' is spoken in the states of Serbia and Montenegro, and 'Croatian' in the Croatian state. These designations can be presumed to be political, or perhaps even merely locational — as the Chinese speech varieties are simply named by the city or province in which they are spoken.

The language-dialect question

The number of linguistic regions identified in the world depends generally on the distinction between 'language' and 'dialect'. This common notion posits the language as the fundamental unit of communication, and the dialect simply as an internal variation. The distinction is difficult to sustain empirically, as elements of this study will reinforce; varieties of speech vary by degree, with any two speakers differing at least marginally. While 'dialect' is the generic term used here, other scholars have made the same point by referring to 'lects' or simply 'varieties'. The broader point, in linguistics, is that varieties of speech differ by degrees, that even unrelated varieties can, by borrowing, share features and vocabulary, and that related varieties overlap to degrees varying not just by region, but by speaker. If an *idiolect* is the sum of all semantic units and syntactic devices understood by an individual, a *dialect* is the intersection of two or more idiolects, the linguistic joint product for the individuals of interest.

But many linguists, perhaps most, do make a distinction between 'language' and 'dialect'. If we persist in asking how many languages there are in the world, we are asking a linguistic question, and any answer ought to be strictly a linguistic answer, using only linguistic

69. A more egregious example would be an inter-*country* boundary; several such examples are detailed later.

information — vocabulary, grammar, genetic relationship.[70] The standard that is nearly always used in linguistics is mutual intelligibility. While the judgement of specialists as to language properties can be useful, the definitive test has generally been taken to be the simple field results of a single question: "Can you understand this?" Native speakers are exposed to utterances from other speakers; if the speaker of one dialect understands speech in a different dialect as its own "language", those dialects are mutually intelligible; in the usual terminology, they are dialects of the same language. If not, they are different languages. But mutual intelligibility is not as simple as an absolute, binary condition; intelligibility is a matter of degree. Two speakers are unlikely to understand absolutely everything spoken by the other, even if they are siblings. And speakers with very low levels of mutual understanding may still recognize the occasional international word. So linguists attempting to answer the question will typically set a single standard — 85%, to take as an example that used by Kwesi Kwaa Prah — and classify any two varieties with mutual intelligibility above that level as dialects of the same language, any two below as different languages. The threshold number may vary from linguist to linguist, but for any given study it will remain the same number. Further complicating the issue is the matter of asymmetry; a speaker of one dialect may understand a second dialect better than a speaker of the second dialect understands the first.

A *dialect continuum* is a linguistic, and geographic, phenomenon in which the properties of language, particularly vocabulary and pronunciation, change gradually over space. The canonical illustration of this principle is the Indo-Aryan continuum of northern India[71] as described by George Grierson. From Sindh and Punjab in the west, to Bengal in the east, the dialects of the Indo-Aryan family blend into each other, with each local dialect being slightly different from, but still mutually intelligible with, the dialects in neighboring locales, usually in all directions.[72] However, dialects separated by some distance, while mutually intelligible with intermediate varieties, may not be mutually intelligible with each other, as is certainly the case with Bengali and either Sindhi or Punjabi. An equally-famous continuum

70. Bernard Comrie (1990a) wrestles with this very question, and raises many of the same issues, including the conventionality of many language/dialect distinctions, though his approach seems to be that linguists cannot resist the imposition of non-linguistic criteria by the public.
71. 'India' is not, of course, being used to refer to the country, the Indian Republic, but to the superregion otherwise labelled 'South Asia' or 'the Subcontinent'. Grierson is working before the partition.
72. The primary exception is that the southern dialect of Marathi is not mutually intelligible with the dialects to its immediate north; it is, however, in continuum with the dialects to the east, and connects with the continuum through Oriya.

exists in West Germanic, including German and Dutch; Bernard Comrie (1990a) uses this example (described in detail by John Hawkins) to illustrate the concept. In these cases of complex intelligibility, as is Comrie's point, a distinction between 'language' and 'dialect' is even more problematic.

A particular tool of linguistic geography, particularly in light of continuous variation, is the isogloss, a linguistic border between two usages, two different words for the same idea, or two different pronunciations of the same phoneme, an underlying speech sound. Hawkins maps several isoglosses for the German-Dutch region, and the progression of lines moving from upland to lowland. As John Gumperz (1961) points out, isoglosses do not always conveniently align, and it is largely in the nature of continua for isoglosses *not* to align.[73] Instead, locations with few isoglosses are focal areas, those with many isoglosses are transition zones; but these are relative descriptions, and at best the focal areas are regions of somewhat-greater extent of *relative* uniformity.

The longer the examination of language intelligibility, the more probable it appears that continuity is the natural state of language evolution. Wherever related dialects exist across a continuous space, they will exist in continuum as well.[74] This is partially supported by the great difficulty that has existed in grouping dialects, as Bantu or Chinese. Examining the accompanying notes to various entries, we can see that 'Ethnologue' groups some "dialect clusters" as single languages; in other cases it classifies them separately. Charles Hockett substitutes the terms 'L-simplex' for a set of dialects all of which are mutually intelligible (here, *simple mutual intelligibility*), and 'L-complex' for a set of dialects all of which are members of a dialect continuum but not all of which are mutually intelligible with all others (here, *complex mutual intelligibility*).

When speaking of a linguistic continuum, we are almost always speaking of vernacular dialects, the language learned and used at home. This is different from the standardized

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73. Of great interest for regionalization outside of language, Gumperz speculates on which landscape features linguistic borders *might* coincide with. Considering various societies, he offers the possibilities of, in addition to administrative units, market centers, caste groups, and networks of trading, marriage, and pilgrimage.
74. Linguists have an unfortunate tendency to describe something as "universal" a posteriori, hypothesizing, apparently, that "there must be a reason". Continuity may not be a universal, and there is no way to establish that it is, a priori. It does seem reasonable that, in the days before mass communication, bonds of intelligibility were maintained as language groups slowly dispersed, but only within segments that are nearby (as defined by the transportation and communication technology of the time), and that the innovations that lead to language change often spread through the group incompletely, reaching only so far in physical (and linguistic) distance.

dialects that are learned at school and used in government business. Those dialects are plucked out of the continuum from a specific point — usually the capital or largest city — and, to the extent that they are or become vernacular dialects for some of the population, no longer represent the continuum accurately. Portuguese and Spanish are not, in fact, neighboring dialects, so in the continuum described by Ralph Penny they would not have been presumed mutually intelligible. Rather, Portuguese and Spanish are the vernacular dialects of the western coastal and Madrid (earlier Burgos) regions, and would be separated in linguistic distance exactly as the western coast and central Castile are separated in geographic distance. Similarly, French is actually the dialect of Paris, and Italian is the dialect of Florence, and so even though the standardized dialects share a border, they are far apart in the continuum and are linguistically quite different, with two key dialects (Occitan and Northern Italian/Padanian) between them.[75]

The 'Linguasphere register' of David Dalby simply groups speech varieties into their broadest affiliations and then ever-smaller affiliations, using novel taxonomic levels. This points towards the idea of a system without explicit taxonomic levels, and without an explicit division between languages and dialects, though this may not have been Dalby's intention. A system without levels accords well with the reality of dialect continua.

However, Dalby is partially developing an alternative code for representing language, one that is based on affiliation. (The consolidated code now used by 'Ethnologue' and the International Standards Organization (ISO) is instead a sequence of three letters with no methodical relation, often an abbreviation of the dialect name.) Each successive symbol (digit, roughly) in the Linguasphere code is meant to have a hierarchical relationship with the preceding symbol, and there are a limited number of symbols to draw from.[76] As Dalby chooses to begin with a numeral, he has only ten to use and cannot therefore make the first symbol represent language family. He thus also employs location, so that, of the ten possible first-order divisions, five are phylosectors (linguistic groupings), and five are geosectors

75. For discussions of the historical development of Portuguese, see Stephen Parkinson, for Spanish, John Green (1990b), for French, Martin Harris, and for Italian, Nigel Vincent.

76. These codes are short sequences of letters or numbers designed to represent (abbreviate or symbolize) dialects in a standardized way. Examples of the 'Ethnologue'/ISO code include 'eng' for English, 'hin' for Hindi, 'spn' for Spanish, and 'cmn' for Mandarin Chinese. The Mandarin code can be analyzed as 'c' for Chinese plus 'mn' for Mandarin, but the other three are simply short for the common English name, and offer no hint that the three dialects are related. By contrast, the Linguasphere code has '50ga' for Irish Gaelic, '50gd' for Scots Gaelic, and '50cy' for Welsh, where the initial '5' indicates Indo-European, the '0' in second place indicates Celtic, and the 'g' and 'c' in third place indicate Gaelic and Welsh, respectively.

(geographic groupings). While linguistic information dominates in subsequent divisions, the use of geosectors is a major weakness of Dalby's approach and suggests that the code is in fact his primary concern. His geosectors are not an appropriate linguistic classification, and his system itself cannot therefore be used for linguistic classification and regionalization.[77] But he does deserve some degree of credit for the general view of varieties embedded in varieties and intricately linked to other varieties, which seems the best model for linguistic relatedness, as well as linguistic regionalization.

In one sense, language is clearly best considered using networks; it is perhaps paradigmatically a network phenomenon. It is communication person to person that keeps language alive, that facilitates the spread of ideas that language is meant to convey, and also the spread of innovations in language itself. This is certainly the view that we would expect Barabási Albert-László and similar scholars to take, and Dalby's terminology ('chains') suggests it as well.

And yet even with the existence of modern technology that has changed the behavior of language by extending these communication networks, language retains a strong localization. Language and place are still connected. A Francophone moving to a Mandarin-speaking area can maintain links with her Francophone family and friends and the culture they share using internet, phone, and mass media. These connections will allow her to receive ideas and innovations from the French culture, and to absorb and transmit them as she might while still in a Francophone area. But she will almost certainly need to learn Mandarin as well, for while the links to French culture can meet psychological and intellectual needs, her connections to other parts of the world will not provide her with food and shelter. For these things she must bargain in Mandarin. And the need for Mandarin comes not from the fact that she has connected to a new network. Rather, she must connect to the new network because she has moved to a new place. Language is a feature of place.

The ideal linguistic map would be radically impractical, but could be constructed as follows. For each dialect of interest, a recording is made; for the purposes of the map, that

77. The idea of mixing attribute types in regionalization might have some applicability in a regionalization perforce of the world, if the goal is comprehensivity. But there are no corners of the Earth that cannot be grouped into some large region for reasons better than mere proximity.

recording defines the dialect. The recording is played for every person. (In the ideal, it is played for every person on Earth, but to impose a touch of practicality, heuristic devices could be used to limit the scope of inquiry; seldom would we start out in complete ignorance.) The listener's comprehension is tested, and a score assigned. The listener's home address is recorded. From this information, a dot map is generated, with each dot located on a listener's address and shaded according to the listener's score. The map would show a concentration of high scores, and most likely a gradual diminishment of scores with distance from the core, until finally comprehension is almost nil. This ideal method allows for levels of intelligibility, and it allows for nearly-continuous variation in space (the variation will be just as continuous as the population distribution itself); this covers the two major objections that are raised regarding linguistic geography and dialectology.

One problem with empirical tests of intelligibility is that subjects will not necessarily be honest. There is sufficient anecdotal evidence to suppose that many individuals will feign not to understand a dialect because they recognize it as other than their own, and out of pride for their own dialect or distaste for the other, are unwilling to admit to their actual degree of comprehension. One possible solution to this is the application of incentives. If subjects were rewarded financially according to their level of comprehension, they would presumably be more inclined to admit to comprehension.

The nature of linguistic regions is revealed in the ideal. If we establish an absolute threshold for intelligibility, then the region in pure terms is defined by the home location of every person who passes that threshold. The result is a bounded region; while a network of individuals may lie at its heart, it has a clearly-identifiable limit, namely the perimeter that just encloses the body of speakers. In practice, even family-defined regions involve a threshold, since there is some degree of borrowing between families; but between native speakers of one family, and native speakers of another, there is a precipitous drop in intelligibility that can easily help us locate the boundary.

But within dialect continua, there is no such obvious threshold, and if we are creating the ideal map, with shading of points indicating degree of comprehension, then the resultant region is clearly radial. The origin of the region is the point where the recording was made; the dialect's influence radiates outwards, weakening with distance. Given this, it is reasonable to understand linguistic regions as hybrid, radiating from a central point (or

region) by which the dialect of interest is defined, but bounded in certain directions, as where a natural barrier to human settlement or a language-family boundary lies.

Our overall geographic framework for language needs to begin with language family, beyond which, according to the best linguistic understanding available at any time, there are no genetic relationships.[78] Two points are in order. First, it is not, of course, that there are no relationships at all between families. Vocabulary is borrowed, speech sounds are borrowed, and even structures are borrowed across family lines.[79] Rather, families do not have any known genetic relationship to each other, no common descent from a previous dialect. Second, the absence of a *known* genetic relationship does not mean the absence of a genetic relationship. Linguistic knowledge is imperfect and constantly improving, and some of today's unrelated families will be shown to have a genetic relationship. This is not problematic for geographic purposes, though, since families whose relationship is so obscure as to be yet unknown must be considered at the very least to form separate linguistic regions within the newly-established larger region, just as most subfamilies with well-established genetic relationships do.

Families create the broadest linguistic regions of our world, the top of the hierarchy. Within these, according to established lines of descent (this would be one case where 'Ethnologue' is generally reliable), we find smaller and smaller regions as we approach the level of the idiolect. Some of the subfamilial levels have so little intelligibility as to form effectively-distinct regions as well. But distinction becomes less possible as we locate smaller regions and mutual intelligibility increases. At some level, whether it is considered to be a 'family', a 'language', or a 'dialect' in a given system, mutual intelligibility exists in a continuum, and we lose the ability to identify distinct linguistic regions.

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78. Here, 'family' is being used for genetic groupings at various levels, including the broadest; avoided is the quasi-biological taxonomic hierarchy in which distinction is made between broader 'phyla' and narrower 'families' based on the methods by which they are presumed to be related.

79. A systematic example of this sort of borrowing is the Sprachbund, a collection of geographically-proximate but unrelated dialects that nonetheless share features, beyond the expected vocabulary. Comrie (1990a) describes a Sprachbund in the Balkans. The distinctive stop system of the Indian subcontinent originates in borrowings from Dravidian into Indo-Aryan (according George Cardona (1990a)) and from Indo-Aryan into Dravidian (according to Sanford Steever).

When desired, we can select any geographic point in that continuum, identify the dialect used at that point as the dialect of interest, and define a region according to that dialect.[80] As we move further in space from the center of the dialect, understanding of it will decrease, though, if we are indeed dealing with a continuum, there will be no obvious boundary at which understanding sharply declines. We must, therefore, establish a threshold of understanding to define the boundary of the region. If field research is not possible, we can use ancillary information to help us estimate where the boundary of understanding is. For example, if our dialect of interest is the dialect of a center of political control, and the government at that center actively promotes the use of the dialect (as generally is the case), we can suppose that understanding of that dialect extends in a meaningful way at least to that government's lines of control. It must be emphasized that this is an assumption in lieu of field work. The political situation influences the linguistic situation, and we can estimate the linguistic situation based on our knowledge of the political situation. But it is the linguistic situation alone that we are describing, and if field research were eventually conducted, its results would be definitive.

Any linguistic attribute can be used, though, to define a legitimate linguistic region. Families and subfamilies define linguistic regions that tell us something real about the cultural environment and experience of an individual operating within it. Maintaining this option is important given the potential flaws of existing sources of linguistic information. What are classified as groups or subfamilies may be the actual location of complex mutual intelligibility, or even simple mutual intelligibility, that serves as our best guide to the individual's primary linguistic environment. Spatial extent in regionalization should be determined by the linguistic attribute of concern; Maithili, Bihari, Indo-Aryan, and Indo-European will define regions at different linguistic scales, but each region represents a legitimate linguistic reality.

'Ethnologue' and intelligibility

Accurate and objective linguistic data at the global scale are rare, and because of the scale they obviously cannot be generated by a single researcher through field work. Perhaps the

80. Intelligibility can be asymmetric; here the emphasis is on intelligibility of the target dialect by others, rather than the intelligibility of other dialects by speakers of the target dialect.

best existing source of global linguistic information, including spatial information, is 'Ethnologue', currently edited by Raymond Gordon.[81] 'Ethnologue' is the product of the Summer Institute of Linguistics, now known as SIL International, which is a Christian missionary group whose documentation of language was and is connected with its mission to translate and spread the Bible. Originally modest in scope, the reference is (at the time of this study) in its fifteenth edition and is the work of a large number of individuals, including previous editors and countless individuals in cities and villages around the world. Its contributors include not just missionaries but well-known scholarly specialists. In its present form it has become a standard linguistic reference, especially because of its comprehensivity. It is meant to catalogue, describe, and classify all of the world's individual languages[82]; and it is often taken to have come fairly close. Languages are listed according to country but also classified genetically. For most of the countries, a map is provided in the published works showing the area in which each language is spoken; unpublished GIS maps exist for other countries. The GIS maps are the product of Global Mapping International, formerly Global Ministry Mapping.

When it is stated in other contexts that there are 6,000 or 7,000 languages in the world, it is likely that 'Ethnologue' is the source. Its current inventory describes a total of 7,299 individual languages, 6,912 of them living. There are 2,092 languages in Africa, 2,269 languages in Asia, 1,002 languages in the Americas, 1,310 in the Pacific, and 239 in Europe. The average language has 828,105 speakers; the median language has only 7,000. In Papua New Guinea there are 820 languages, with an average population of 4,470 and a median of just 1,196.

This study is certainly not intended as a refutation of the idea of discrete languages with discrete boundaries. That critique is fashionable, but the overt appearance of 'Ethnologue' and its map should not be taken as an indication that SIL needs that particular critique. 'Ethnologue' recognizes dialect continua explicitly, calling them 'dialect clusters' or 'language

81. This study was conducted from the internet version of 'Ethnologue', http://www.ethnologue.com/, which according to SIL contains the entirety of the publication. All references to 'Ethnologue' policy and history contained in this section, other than those relating to specific language pages, are taken from 'Introduction to the printed volume', online at http://www.ethnologue.com/ethno_docs/introduction.asp. Statistics on living languages follow from http://www.ethnologue.com/ethno_docs/distribution.asp.

82. 'Ethnologue' uses the terminology of 'language' and 'dialect'. While the examination of sources for this study helps cast doubt on this distinction, generally speaking the terminology of the sources themselves, including 'Ethnologue', is maintained.

clusters' (depending on whether the components are, in 'Ethnologue', dialects or languages). And the only critics suited to make the critique are those who never speak of discrete languages themselves.

Nonetheless, 'Ethnologue' can be critiqued on linguistic grounds from its own approach. Its method for distinguishing between languages and dialects seems to be based on a written policy:

> Not all scholars share the same set of criteria for what constitutes a "language" and what features define a "dialect." The Ethnologue applies the following basic criteria:
> — Two related varieties are normally considered varieties of the same language if speakers of each variety have inherent understanding of the other variety at a functional level (that is, can understand based on knowledge of their own variety without needing to learn the other variety).
> — Where spoken intelligibility between varieties is marginal, the existence of a common literature or of a common ethnolinguistic identity with a central variety that both understand can be a strong indicator that they should nevertheless be considered varieties of the same language.
> — Where there is enough intelligibility between varieties to enable communication, the existence of well-established distinct ethnolinguistic identities can be a strong indicator that they should nevertheless be considered to be different languages.

We are exposed immediately to the fact that 'Ethnologue' is applying extralinguistic factors to determine a linguistic question. The first criterion is simple mutual intelligibility, which is the expected value. The second criterion is, in part, complex mutual intelligibility, including the existence of an intermediate dialect with which two varieties are each separately mutually intelligible, the condition that exists within a dialect continuum. So ostensibly 'Ethnologue' is doing what many other linguists do in such a case, which is to classify such continua or clusters as a single language. The third criterion introduces a non-linguistic rationale for division, even though the determination is "what constitutes a "language" ".

The most obvious problem with these criteria is their inconsistency. It could be noticed that criteria two and three are each worded in such a way as to give 'Ethnologue' maximum flexibility, to apply or not apply either criterion based on a subjective judgement. This is completely contrary to the spirit of standards. We establish standards to bind ourselves, with the benefit of being able to communicate to others. But readers of 'Ethnologue' cannot truly be sure, when looking at an entry, which definition of 'language' 'Ethnologue' is using at that moment.

The second criterion is not a mirror opposite of the third criterion. The third criterion allows 'Ethnologue' to divide language based solely on ethnic identity. But the second does not allow 'Ethnologue' to unite language based solely on ethnic identity; the speech varieties of groups that share an ethnic identity will not be considered the same language unless there is also a valid linguistic reason for doing so, namely that each speech variety is mutually intelligible with a common, other variety. Put another way, what would otherwise be a single language can be split into multiple languages based solely on the non-linguistic criterion of ethnic identity; but what would otherwise be separate languages cannot be joined into a single language based solely on the non-linguistic criterion of ethnic identity. It is also more than curious that this study produced not a single example of 'Ethnologue' applying the second criterion. It does note the existence of language clusters, but notes this existence while classifying the clusters' elements as separate languages.

Is there a reason why we should interpret 'Ethnologue' primarily as a linguistic work, and thus criticize the nature of its criteria? There are in fact several reasons. The first is a simple matter of terminology. 'Ethnologue' is speaking of languages. If it is interested in ethnic groups, identity groups, political citizenship, or some other feature of the human landscape, it can easily speak of these things directly. It does not; and in fact all of its terminology suggests that the objects of its study are the languages themselves.

Second, 'Ethnologue' does not use the term 'mutual intelligibility'. Instead, it uses the term 'inherent intelligibility'. It is making clear that it is concerning itself with properties of the language itself, not the speakers, since the case it is attempting to distinguish with the term 'inherent intelligibility' is the case of a group of speakers who understand the speech of a different group of speakers not because their native varieties are inherently alike, but because the speakers have learned the other group's variety as well, as expressed in the first criterion. In other words, Yiddish will never be inherently intelligible with Hebrew, no matter how many Yiddish speakers learn Hebrew, or Hebrew speakers learn Yiddish.

Third, entries in 'Ethnologue' are primarily records of linguistic information, not ethnic information. The entries are carefully classified into families and groups by similarity and by known or presumed descent from a common parent language — in other words, according to linguistic criteria. When we speak of linguistic relatedness and descent we have taken ethnicity out of the question, whether that term is taken as a matter of identity or one of race. The political or ethnic provenance of a group is not taken into account during

classification. Kazakstan and Georgia are states that have emerged from the Russian Empire, but Kazak and Georgian are not related to Russian as forms of language, and 'Ethnologue' does not claim that they are. Many of those who speak English, Spanish, or Portuguese in the Americas are not ethnically related to the Europeans who brought those speech varieties to the Americas. The medieval Franks spoke a West Germanic dialect. The modern Franks are the French. But 'Ethnologue' would never consider French to be West Germanic language. 'Ethnologue' itself reports that the speakers of Slovenian in Austria consider themselves to be Carinthian, and a part of German culture. But 'Ethnologue' would never consider this Carinthian a West Germanic language.

'Ethnologue' will allow that speaker attitudes are sufficient grounds for considering mutually-intelligible varieties to be separate languages, but would never suppose that two languages were related simply because speakers asserted that they were. And speaker attitudes are hardly the object of universal respect in 'Ethnologue', which states, of Antigua and Barbuda Creole English, "Most villagers deny the existence of a creole, although they speak it."

Comparison of 'Ethnologue' to other sources

Among linguists 'Ethnologue' already has a reputation of breaking language down to the finest possible level, thereby increasing the number of languages to its maximum. This study was not designed to test whether 'Ethnologue' might in some cases be overstating the number of languages in the world. In a review, Harald Hammarström finds such evidence, as well as matching evidence that 'Ethnologue' has the number about right, or is actually understating the number. But while sources can be found that would break individual groups down even further, for the most part the specialist literature makes clear that 'Ethnologue', even when it is considering only mutual intelligibility, has the most restrictive standard. 'Ethnologue' itself notes that some of its languages are mutually intelligible. It is possible, then, to simplify the classification of language considerably from 'Ethnologue'. A chief purpose of the linguistic element of this study is the assembly of evidence on the intelligibility of the designated languages in 'Ethnologue'. The value of the work lies in connecting SIL's extensive cartographic work on language distribution with a less-extreme standard of language division.

Clearly, the ideal version of this study would be based on the strong arguments of numerous specialists for each dialect. Such information is not available at the scale of this study, or not readily in any case. Adherence to such a standard, then, would require a narrowing of the scale of the study; but the point is to contribute to a *global* picture of language. 'Ethnologue' makes most of its questionable judgements in the direction of overstatement and is therefore apparently biased, but the very design of this study might suggest the opposite bias. While some care has been taken to eliminate spurious or unreliable sources, it is fair to read the resulting groupings as an opposite extreme from 'Ethnologue'. It is entirely possible that 'Ethnologue' has in certain cases produced a division more accurate to reality. Furthermore, given the breadth of this study and 'Ethnologue' itself, it would have proven impossible to complete more than a fraction of the potential re-examination. Nonetheless, the results of this study strongly support the idea of a world with far fewer linguistic regions, albeit with more complicated internal relationships among speech variants.

What is most remarkable, on examination of 'Ethnologue', its methods, and its contents, is the degree to which 'Ethnologue' makes decisions on language classification based on non-linguistic criteria. Despite its name, 'Ethnologue' is written and conducted as if it were a study of language, not of ethnic groups, nor of political groups, political territories, or general group identities. These are all valid subjects for study; but the information such study produces does not tell us about languages, dialects, or language families. 'Ethnologue' states that there are 6,912 living languages in the world. This number is likely much higher than any figure that would have been obtained based strictly on linguistics, which is what readers are generally expecting to determine how many languages there are in the world.

Appendix D lists the many sources to which 'Ethnologue' was compared, and cites the relevant remarks. The bibliography was used to create a database which groups the languages of 'Ethnologue' first by simple mutual intelligibility, and second by complex mutual intelligibility. The database of intelligibility was joined to the 'Ethnologue' shapefile, facilitating two dissolves, by simple and complex mutual intelligibility, and producing, therefore, two geographic data sets presenting alternative regionalizations to that found in 'Ethnologue'. Using the sources, including most importantly 'Ethnologue' itself, it was

possible to group 1,212 of 'Ethnologue's languages into 251 dialects based on simple mutual intelligibility, and 1,022 languages into 65 continua based on complex mutual intelligibility.[83]

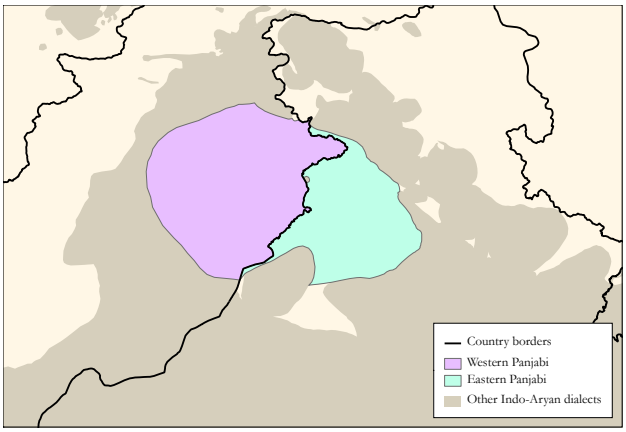
The country model in 'Ethnologue'

The likely influence of the country model on the language classifications in 'Ethnologue' is revealed both in statistics and in maps. Often the only apparent criterion for dividing one language in 'Ethnologue' from another is the country in which the speakers live — even though these countries have nothing to do with cultural realities and in some cases not even political realities. The examples here are all based on 'Ethnologue' maps, and accompanied by figures taken from 'Ethnologue' entries. These can serve as a small example of how the comparison of geographic data sets can reveal dependencies in the data, which in this case can reasonably be taken for flaws.

Punjabi

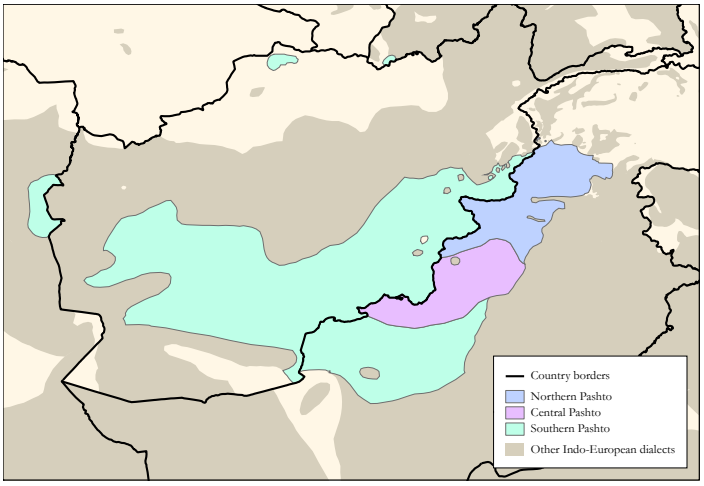
'Ethnologue' lists two major varieties known as Panjabi.[84] These are Eastern and Western. In Pakistan, there are 61 million speakers of Western Panjabi; in India there are 27 thousand, located in Jammu and Kashmir, Delhi, and Haryana, but notably not in Punjab state. In India there are 27 million speakers of Eastern Panjabi, and none in Pakistan. This means that these two varieties are classified based strictly on which side of the border the speakers live on, a border that has only existed for sixty years. 'Ethnologue' explicitly states that Eastern and Western Panjabi are in continuum, and Grierson makes this point as well.

83. The figures for continua do not include large continua suggested solely by lexico-statistical methods, such as Bantu (in the conclusion of J. Vansina, and separately of Thilo Schadeberg), Gur-Adamawa-Ubangi (suggested by Patrick Bennett and Jan Sterk), or Benue-Kwa (the combination of all of Benue-Congo and Kwa, proposed by Kay Williamson and Roger Blench). But there are more direct reasons for considering Bantu a continuum, including the neighbor intelligibility of dialects classified in different subgroups.
84. The common-English 'Punjabi' is generally used in this study, but references to 'Ethnologue' preserve its 'Panjabi'.



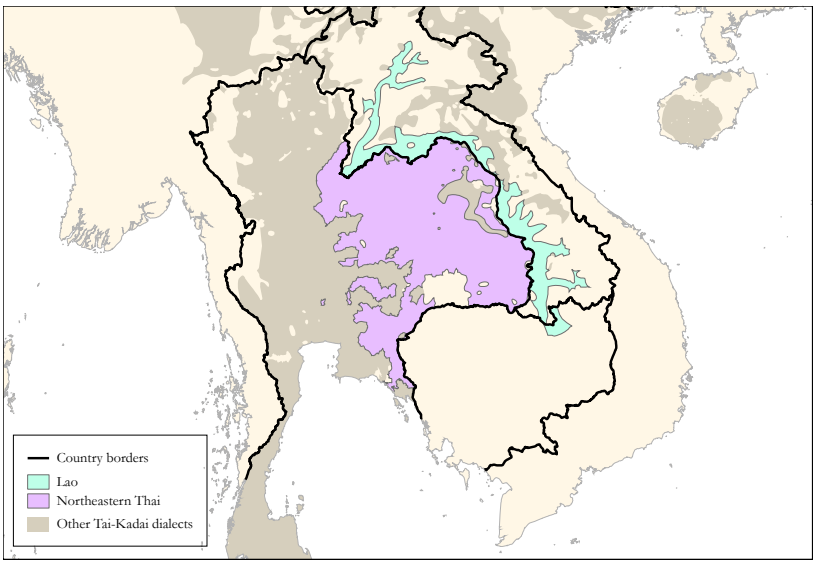
Pashto

Central Pashto is not spoken in Afghanistan at all. Northern Pashto is said to be located within Afghanistan in the central Ghilzai region, which is somewhat indistinct. Its numbers are not directly specified, but two possible estimates are 15 thousand in Afghanistan from a total of 9 million speakers, and forty percent of the total population of Afghanistan, or 11 million. But the official dialect of Afghanistan is identified as Southern Pashto. The recognized political border (approximately the historical Durand Line) that supposedly divides Northern and Central Pashto in the east from Southern Pashto in the west is not, in fact, a line of control; the Pashtuns range freely across the line, and the Pashtun-based Taliban control both sides of the line independently of the franchise holders in Kabul and Islamabad. D.N. MacKenzie treats all of Pashto as a unitary whole, specifically mentioning its use in Afghanistan and Pakistan. Internal dialect differences he mentions are minor, primarily phonological, which in other contexts would be called accents.



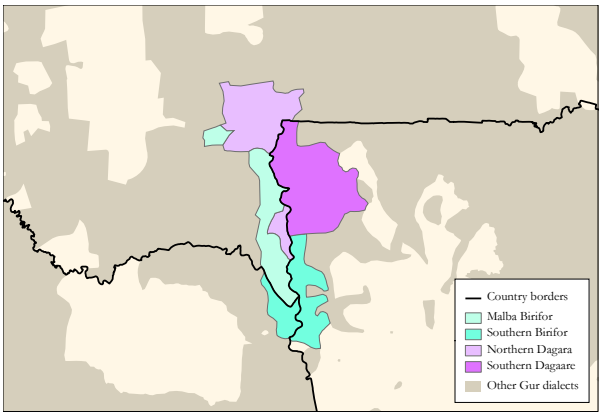
Northeastern Thai and Lao

'Ethnologue' does not list Lao as a language spoken in Thailand, nor does it list Northeastern Thai as a language spoken in Laos. It groups them together at the lowest level within the Tai-Kadai family, and as the map shows, the line between them coincides exactly with the recognized political boundary. David Strecker states explicitly that "Lao dialects in Thailand are also called 'Northeastern Thai' " [p749], a term he does not otherwise recognize. Thomas John Hudak also considers the terms synonymous.



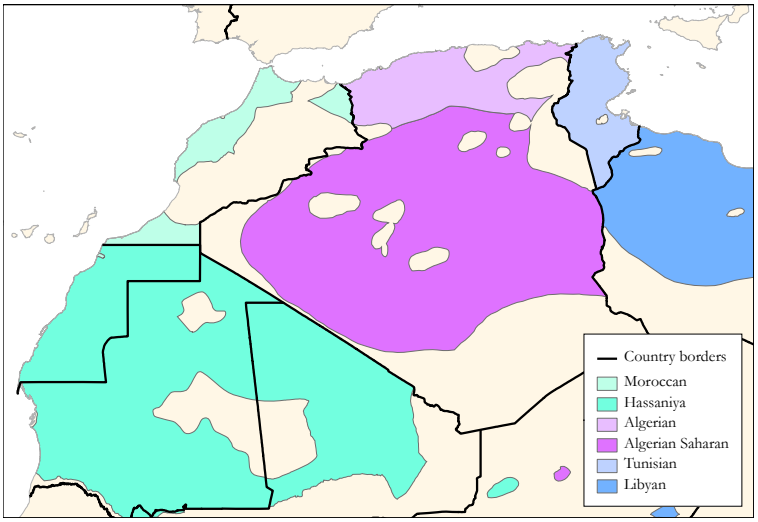
Dagara and Birifor

'Ethnologue' classifies Dagara and Birifor as two languages each, a northern variety and a southern variety. As the map suggests and the entries in 'Ethnologue' attest, the southern varieties of both Dagara and Birifor are only spoken in Ghana and Côte d'Ivoire, while the northern varieties of both are only spoken in Burkina. In the case of Dagara, the northern variety is spoken at the northern *and* southern ends of what seems to be a continuous area, and the determining factor seems to be the political boundary. 'Ethnologue' acknowledges (in the entry on Northern Dagara) that "Dagara and Birifor are partly intelligible"; Jack Goody (writing about Upper Volta, or Burkina Faso) says that they are mutually intelligible. Douglas Pulleyblank speaks of Dagara as a single language, used in both Ghana and Burkina.



Maghrebi Arabic

'Ethnologue' has separate entries for Moroccan Spoken Arabic, Algerian Spoken Arabic, and Tunisian Spoken Arabic. None of these is spoken in either of the other two states. Of particular note is Moroccan Spoken Arabic. As mapped, Moroccan Spoken Arabic is internally discontinuous in two places, while its extremities are contiguous with Hassaniya to the south and Algerian Spoken Arabic to the east. It is also worth noting that the political line that appears to divide Moroccan vernacular from Hassaniya has not existed for decades; Morocco controls most of the Western Sahara. 'Ethnologue' admits that western dialects of Algerian are close to Moroccan, and that eastern dialects are close to Tunisian. Janet C.E. Watson (quoted by Jeremy Palmer) describes Arabic as a single continuum. Andrew Freeman, an Arab dialectologist, divides Arabic into only two categories of mutual intelligibility, with all of Maghrebi as one.



Serbocroatian

The fourteenth edition of 'Ethnologue' lists the familiar language Serbo-Croatian. For the fifteenth edition, that has vanished, replaced by Serbian, Croatian, and Bosnian. In Croatia, there are 4.8 million speakers of Croatian, but no speakers of Bosnian or Serbian. In Serbia and Montenegro, there are 10.2 million speakers of Serbian, and no speakers of Bosnian or Croatian. In Bosnia, there are 4 million speakers of Bosnian, 469 thousand speakers of Croatian, and 400 thousand speakers of Serbian.[85]

According to Greville Corbett, there is a single Serbo-Croat, its major dialectal divisions (on linguistic grounds) follow very different lines, and all of the 'Ethnologue' languages are part of the central dialect Štokavian. ('Ethnologue' lists 'Shtokavski' as a dialect name in Serbian *and* Croatian.) The dialects within Štokavian — Ikavian, Ekavian, and Ijekavian — do not follow sectarian lines. E.A. Hammel notes the dialect continuum of *all* Slavic dialects in Yugoslavia, and the fact that members of one of the sects[86] are often closer in dialect to those of other sects than others of their own sect. Erhard Hinrichs, Dale Gerdemann, and John Nerbonne describe a continuum throughout southern Slavic, and identify Serbo-Croatian as an element of that continuum.

85. It seems unlikely that 'Ethnologue' is expecting those of us alive between 1991 and 1995 to believe that Bosniaks (Bosnian Muslims, in the terminology of the time) outnumber Bosnian Serbs ten to one in identification. Here, therefore, 'Ethnologue' is abandoning its own criterion of "ethnolinguistic identity" for place of residence and passport status.

86. Serbs, Croats, and Bosniaks can usefully be considered as culturally unified but for religious heritage (if not current belief), respectively of Eastern Orthodox Christianity, Roman Catholicism, and Islam.

Mapping and symbolization

As mentioned before, the ideal linguistic map would display a dot for every person for every dialect of inquiry, shaded by the degree to which the person understands the dialect. This is not, of course, realistic, but it does suggest the goal towards which our examination should tend. While it is unlikely that any of the boundaries used in the 'Ethnologue' maps represents the absolute limits of dialect extension, theoretically this could be the case; and the use of polygons for linguistic regions is not condemnable, and is at worst misleading. In any case, it simply reflects the limitations of cartographic technology. Raster storage might be an improvement, given its applicability to continuous variables, and the natural way it depicts gradual change in the variable through gradual change in the symbol. But in addition to the inferior presentation of rasters, vis-à-vis vector graphics (raster graphics are, to be more direct, often too crude for respectable cartography), rasters among professionals may suggest a level of quantification that is not present. In other words, the specific values of each raster cell may only have been chosen to give the appearance of gradual change, but the widespread use of remote-sensing imagery, among other things, may lead map users to conclude that there is greater certainty about the location and extent of the linguistic region than the underlying data warrant. (By the same token, if linguistic data *are* in any particular case so precise and accurate, the argument for raster storage and presentation is much stronger.)

While it might seem appropriate to symbolize a region of complex mutual intelligibility (a continuum) differently from a region of simple mutual intelligibility, for instance through the application of a color gradient, in linguistic terms there is no fundamental distinction to represent. If all language exists to some extent in a continuum, if it changes gradually over space regardless of how little or how slowly, then all linguistic regions are continua, and a special symbolization would be misleading. In other words, there is always some difference in language from one end of a continuum to another. The difference could be measured in degree of intelligibility, the value of each continuum (region) being its *lowest* degree of intelligibility between two points; but this would warrant no greater distinction than the arbitrary classification symbols of a choropleth map, such that darker map areas, to use a standard choice, would represent regions of higher intelligibility between the extremes. As to the possibility of introducing a symbol gradation within the continuum itself, such a gradation would always be changing from one symbol (color) to another, suggesting that the

area between the two recognizable colors is home to impure mixes of the two pure dialects on either end. In a linguistic continuum, each point is of equal worth to any other point. Additionally, any two opposites on the entire perimeter of the language region are extremes on the continuum; there is no definitive axis of variation.

MacEachren (1994) offers extensive opinions[87] on the representation of uncertainty; of particular import is his implication that uncertainty is just another kind of data, and must be symbolized appropriately. His first suggestion for symbolization, saturation, is readily compatible with current GIS technology. Saturation requires color, though, and so cannot be used in many mapping environments. His second suggestion, focus, which for him refers to the variation of tones, the variation of opacity, and the deliberate reduction in resolution, can easily be used in the absence of color. It is not easily created, though. And the distortion of resolution, perversely, may introduce a degree of unwarranted certainty, as though to suggest that the underlying data are perfectly accurate and empirical, within the limits of the manufactured resolution (which is the general and reasonable interpretation of such representations), rather than less-than-accurate at the actual resolution.

While lines of control and consensus lines have no obvious analogues in linguistic cartography, fixed lines and reference lines can be used precisely as in political cartography, to mark (in the former case) permanent features of the landscape that correspond to linguistic boundaries, and (in the latter case) lines of no empirical significance in linguistics, but which might serve informational purposes on relative location. Reference lines would be the proper choice to indicate conventional linguistic borders, such as those used in 'Ethnologue', but they could also be used to mark the very same conventional political borders as in political maps.

Linguistic regionalization

A central consideration in identifying linguistic regions is that of scale. First, it is possible to subdivide a given linguistic region almost infinitely. A region can be small enough to contain just a single individual, defined by that individual's idiolect. But any combination of two or more individuals (particularly if we have already confined ourselves

87. MacEachren has significant experience and this is surely of value; but he admits that his recommendations on this matter come from his own belief and experience, not from testing; in other words, from art.

to a linguistically-defined region) can also define a dialect, based on the intersection of their idiolects. Regions can be identified for any number in the range from one to the total number of speakers, with the number of regions varying inversely to their number of occupants. All are linguistically valid; all represent a real collection of symbols and logics that can be understood by the included speakers. But dialects with minimal content do not tell us much about the linguistic space an individual inhabits, and we cannot portray a nearly-infinite number of regions. We must, therefore, make an informed decision as to the scale of the dialect: a broad scale with many speakers and lower intelligibility, or a narrow scale, with few speakers and higher intelligibility. In keeping with the theme of variable regions, no single choice of linguistic scale is appropriate. The choice will be influenced by cartographic scale, certainly. But it is the engagement we are making with the population that most determines our choice of scale. An examination of the Balkans might require a very narrow definition of dialect to illustrate the linguistic environment; and the mismatch between the linguistic divisions, which Corbett carefully describes, and the national identities (Serb, Croat, Bosniak), would be informative. But understanding the political tensions in the Andes would more likely benefit from the most inclusive definition of Quechua and Aymara[88], loosely united by language but strongly united by history and identity, and existing in contrast to those whose only dialect is Spanish.

Second, there is a compelling temptation, intellectually as well as emotionally, to strive for equivalence (or parallelism) from one region to the next, within a given inquiry. It might seem appropriate to derive all regions from an inquiry into vernacular dialect. But even without the exaggeration of linguistic dissimilarity provided by 'Ethnologue' and related approaches, there are still many vernacular dialects used only in very small regions. Depending on scale, these can simply appear as noise. In such a case, regions might best be defined by family at the global scale. On the other hand, some families, particularly Indo-European, are spoken over vast areas. Family regions at many scales would convey little information. The compromise that suggests itself is to present, at a given cartographic scale, information from different linguistic scales. This violates the principle of equivalence, but careful application of scale-specific labelling and symbolization can make clear which regions

88. In any case, Yolanda Lastra (citing Lucy Briggs) states that Aymara is not a family but "a single language subdivided into mutually intelligible varieties" [p247]. And Gary Urton (cited by Kendall King) finds two dialects of Quechua (notably bearing country names in 'Ethnologue') to be mutually intelligible.

are defined by families, which by subdialects, and which fall in between. By adopting this compromise, it becomes possible to convey maximum information within the limits of practicality, or legibility. Thus, at the global scale, we would see regions for large continua, such as Bantu, Indo-Aryan, and Chinese, alongside regions for colonial European dialects existing in isolation outside of their regions of origin, alongside regions for entire families, such as Tai-Kadai and Quechuan.

The linguistic regionalization of the world, or any part of it, should be guided by several principles. First, a master hierarchy should be established in which the broadest linguistic regions represent families of no broader established relationship, and these regions are taken to comprise smaller regions defined by narrower dialects, which are themselves taken to comprise smaller regions defined by narrower dialects. Second, for most purposes, dialect continua should be presented as single regions; no verbal or visual distinction should be made between simple and complex mutual intelligibility, in recognition of the generally arbitrary and conventional nature of divisions of a continuum. However, when regions are presented in isolation, any dialect of interest, however determined, can be used to define its own region (as indeed *any* attribute of the human landscape can be used to define a region). Third, for most purposes, the linguistic scale of the regionalization should be determined by the geographic scale; no effort should be made to set a linguistic-scale equivalence among regions (regions uniformly defined by families or by simple mutual intelligibility, for example) unless linguistic scale is the particular inquiry being employed.[89] Fourth, care should be taken to emphasize the parallel nature of regions within any linguistic inquiry, so that regions involved in significant or total overlap are not excluded or obscured. Fifth, in cases of ambiguity, the default should be the presentation of broader, more inclusive regions defined by a lower degree of relatedness, given the relative lack of dispute over broader classifications[90], as opposed to language-dialect division.

Appendix C contains a practical set of regions based on vernacular dialects, following these five principles.

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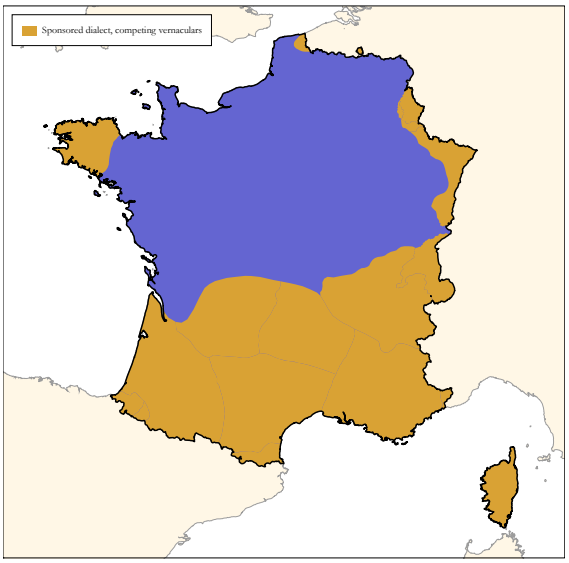
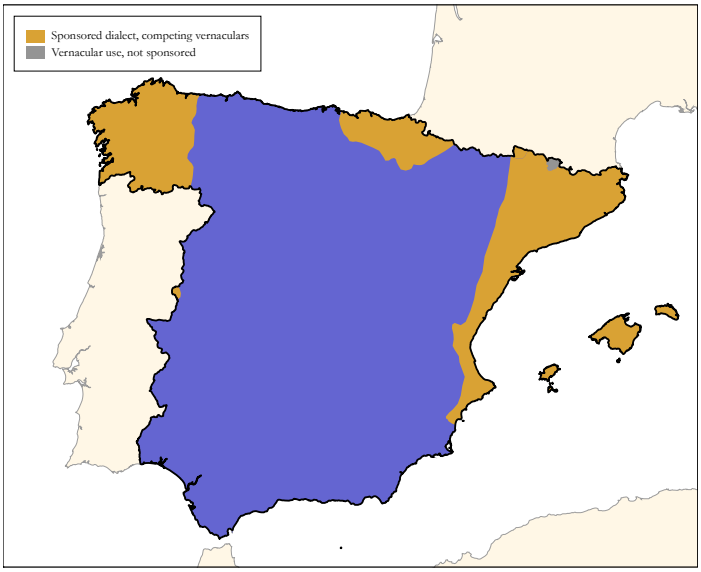
89. Even so, linguistic scale is complicated by the general lack of equivalence between families, with isolates like Basque existing alongside intensely-various families like Niger-Kordofanian and Austronesian.
90. To speak of a relative lack of dispute over broader classifications is to prefer, in this case, classifications arising from the comparative method, about which there actually is a relative lack of dispute, as opposed to classifications arising from lexical statistics.

By allowing an empirical examination of political control to inform our study of language realities, we can improve our understanding of the linguistic present, and perhaps shed light on linguistic processes extending from the past through the future. Specifically, we can divide any vernacular linguistic region into three types of areas: areas where the dialect is the predominant vernacular, areas where the dialect receives state sponsorship, and a safe core region where both are true. The areas where the dialect is the predominant vernacular but lacking government protection represent, in all likelihood, the dialect's past, places where the dialect was once strong but where the pressure of a different state dialect limits its potential for future survival. Conversely, those areas of state sponsorship where the dialect is not yet the predominant vernacular most likely represent the dialect's future, as the value of government favoritism drives other vernaculars out.

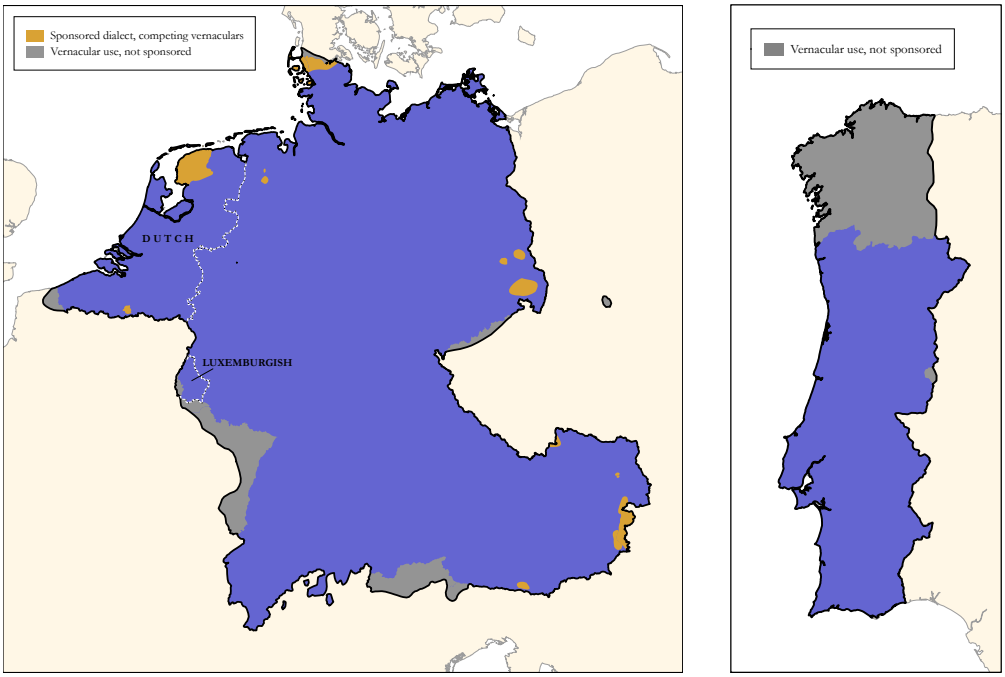
A few familiar examples from western Europe, where government control is largely uncontested, can illustrate the concept. In particular, the French and Spanish (Castilian) dialects are strongly tied to government policy. In the case of French, the French state and in particular the French political and cultural élite are heavily invested in the cultural and linguistic superiority of French. In the case of Spanish, the Spanish state and the Castilian political élite are heavily invested in the idea of Spanish nationality, Spain as a united and distinct nation, nationalism, and the perpetuation of the Spanish state, with Castilian merely a symbol of that nationalism and unity. In both cases, the promotion of the favored dialect is active and deliberate, and puts competing vernaculars at serious threat of decline, a decline that is ongoing.





Because German and Dutch are drawn from a western Germanic continuum, it can be informative to view the continuum as a whole, with reference lines dividing the areas of sponsorship for German from the areas of sponsorship for Dutch (with a third area, coterminous with the state of Luxemburg, in which both German and Luxemburgish receive state support). This is not possible in western Romance, however; the Portuguese (or Portuguese-Galician) region overlaps with the Spanish region in Galicia, where the predominant vernacular is Portuguese, but only Castilian receives state sponsorship.[91]

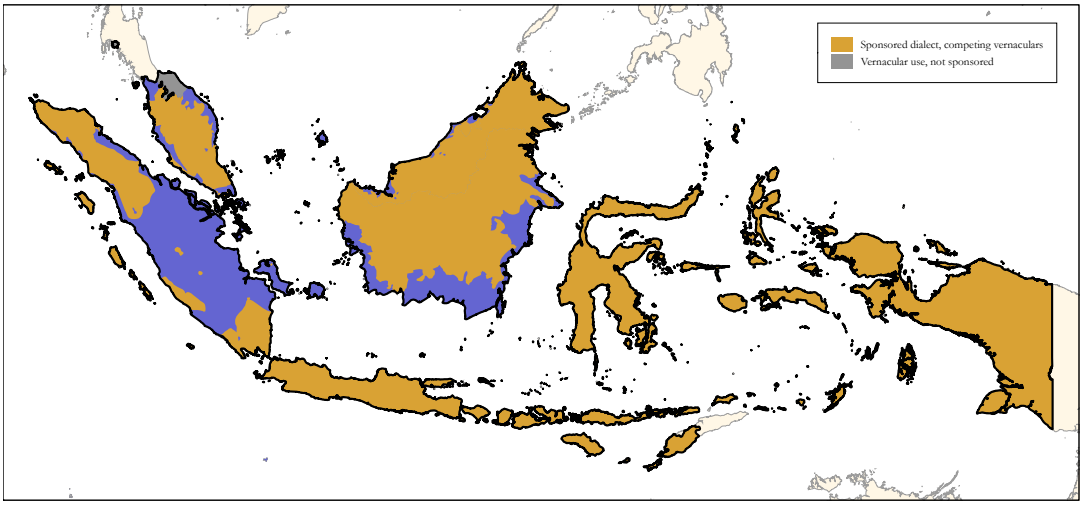
91. An equivalent example is Corsican, which is close to standard Italian, but under heavy pressure from French. There are many other examples in the western Romance continuum of a Romance vernacular competing with a state-sponsored dialect that is also from the continuum. Those examples, however, are not elsewhere the subject of state promotion.



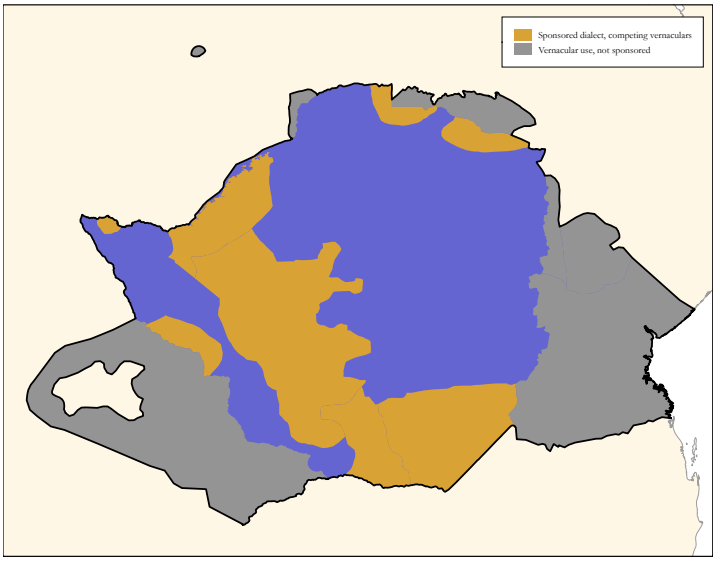
A similar case is that of Northeastern Thai and Lao, discussed above. It may not make sense to subdivide the main contiguous area of the Tai-Kadai family, so clear are the continuities. But Northeastern Thai is the one instance where a Tai-Kadai vernacular dialect is state-sponsored under one government (Laos) but also competing with a related dialect sponsored by another government (Thailand).

Standard Malay and closely-related dialects are spoken along the Strait of Malacca, astride a major trade route. It is for this reason, as D.J. Prentice relates, that it was used widely as a lingua franca, and from there became the state-sponsored "national" dialect of both Malaysia and Indonesia. The extent of Jakarta's control over some distant areas, particularly in western New Guinea, is not clear. It is possible to say, though, that Malay has at some points received state sponsorship throughout these areas, and given the Westphalian system, a complete break from Indonesia is unlikely for any of the franchise territory.[92]

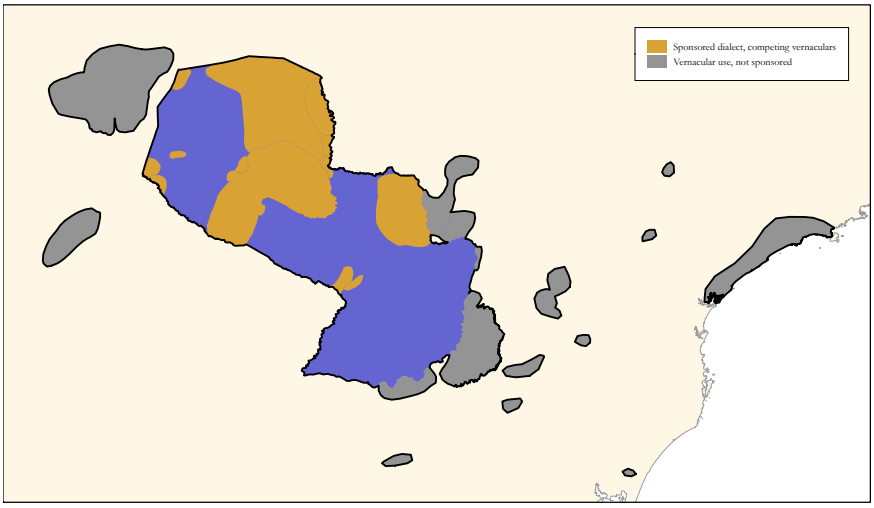
92. Nor does East Timor provide a counterexample; it was deemed a special case because Indonesia's conquest had violated the Westphalian system, a logic similar to that applied to Estonia, Latvia, and Lithuania.



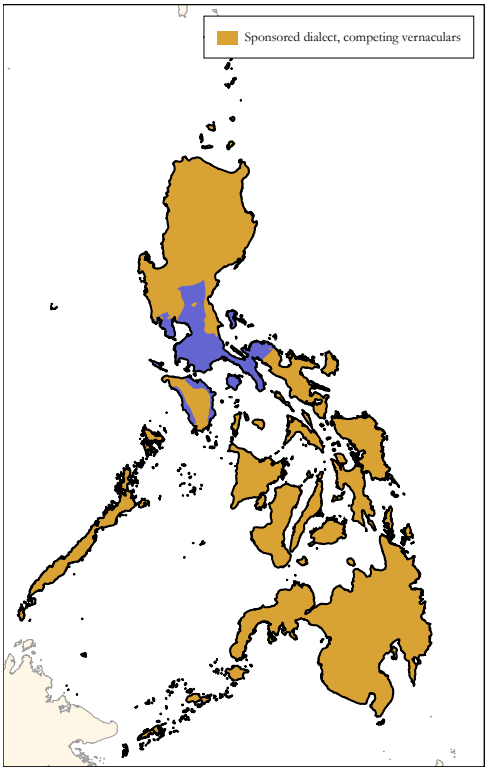
Union Shona is the most important vernacular in Zimbabwe, and related Shona dialects are spoken elsewhere in Zimbabwe and in neighboring areas. But Union Shona is also the favored African dialect of the state (though English remains official).



The native dialect of Guaraní is an important vernacular in parts of South America; but it has also been adopted, according to Comrie (1990a), as a symbol of national identity by the government of Paraguay. Political borders in this part of the world have no cultural salience, and governments must create identification as a way of strengthening their rule. The choice of Guaraní is, however, a rare example of the promotion of aboriginal culture by a government in the Americas. Guaraní is shown below with the other members of Subgroup I in the Tupi family.



Tagalog, as the native dialect of Manila, was always in a strong position with respect to the other native dialects of the Philippines. As Paul Schachter reports, its support from the Philippine government since 1937 has made it nearly ubiquitous in the archipelago as a lingua franca, in addition to its vernacular presence in Luzon. The name 'Pilipino', used for Tagalog, emphasizes its assigned and assumed role as the national dialect.



REGIONALIZATION IN PRACTICE

The attribute-defined regionalization process is almost infinitely expandable, and produces more regions, and sets of regions, than can be used or depicted. Its application, then, inevitably involves judgement, and a degree of art. Choices must be made. In politics, we must decide where to draw the line of significance in size of government. In language, we must determine which of the possible linguistic regions to focus on. Beyond these, we must choose a specific set of inquiries to apply, and in some way limit the task so that it can produce results in a reasonable timeframe, and produce a set of results concise enough to process.

An empirical reexamination has the potential to produce and reveal large quantities of new information. While it could obviously be very valuable to provide that information in its raw form to the public, and in particular the scholarly community, neither the public nor other scholars expect only unprocessed data. These data must be interpreted; the significance of every fact is not immediately apparent, and not all facts are equally important.

Superregions

A superregion is a multiple-attribute region with a minimal and maximal extent. The core of the superregion is the area in which all of the defining attributes are widespread, if not universal. The periphery extends as far as any one of the attributes has broadened its penetration and influence. The minimal extent is the intersection of the attribute-defined regions narrowly conceived; the maximal extent is the union of the attribute-defined regions broadly conceived.

Though he did not specifically have superregions in mind, Hart does note: "A basic tenet of geography is the fact that many, perhaps most, of the features of any given area are in some degree interrelated." [p22]; he later encourages geographers to "seek out the interconnections that bind together the disparate ingredients of place". [p22] This captures the premise of the superregion, which is that certain regional concepts are best represented as the presence, in varying degrees, of a related set of attributes of the human landscape. In some cases, *limiting attributes* might also be used in the definition, such that the presence of an

attribute is significant only within the extent of the other attributes.[93] Superregions as proposed here include many vernacular regions, and are often similar in conception to the so-called civilizations (as in Huntington), the highly-influential cultures that have emerged from time to time, in various parts of the world, and left and continue to leave an impact on their neighbors. Additionally, a select group of superregions would be preferable in world regional geography and the division of area studies, and most preferable would be the same group of superregions for both.

As mentioned before, a superregion of India or South Asia can be defined by the Indo-Aryan linguistic continuum, the related religions of Hinduism and Buddhism, the use of Brahmi scripts, the current extent of the Indian Republic, and the historical extent of the British Raj and the Mughal Empire. The spread of Hinduism and Buddhism have taken with them not just the Brahmi scripts but also a large loan vocabulary drawn from Sanskrit (of the Hindu scriptures) and Pali (of the Buddhist canon) which, to the extent that it can be measured, qualifies as another potential attribute, since it represents a bond to a civilizational "high culture". Though entirely a subset, a Tibetan superregion could also be identified, by the Tibetan dialect continuum, Tibetan script, Lamaist Buddhism, and the Tibetan autonomous region of the People's Republic of China.

Also to repeat, a superregion of China or East Asia can be defined by the Sinitic linguistic continuum, Confucianism, Chinese characters, the current extent of the People's Republic of China (the modern Chinese empire), and the maximum (anachronistic) historical extent of the empire. With the script has gone, as with India, a large loan vocabulary into unrelated dialects such as Japanese, Korean, and Vietnamese. Just considering the reach of Buddhism, much of this superregion coincides (at least peripherally) with the Indian superregion.

An Islamic superregion can be defined not only by Islam, but also by the Sunni sect, the Arabic-speaking area, the use of the Arabic script, and historical Caliphate rule; or, to emphasize even more its Arabic core, membership in the Arab League, and the limiting attribute of the desert. The inclusion of Sunnism, though a subset of Islam, would be specifically helpful in defining the core. Though Persian and Turkic cultures made

93. An example is the presence of Roman Catholicism in the definition of many cultural regions. Catholicism is clearly germane to Polish or Italian identity, and non-Catholic parts of Poland and Italy are not core; but neither could all Catholic areas be considered as Polish or even Italian.

significant contributions to the broader Islamic culture, it would be misleading to see these as cultural features of an Islamic region. Instead, Persian and Turkic regions can be defined primarily in linguistic terms (though perhaps considering the current political reach of central dialects, as demonstrated earlier), with Islam as a limiting attribute.

An Anglican superregion can be defined by the vernacular use of English or English creole, the official use of English, common law, historical rule by Great Britain, membership in the Commonwealth, and Anglican Christianity. A similar French superregion can be defined by the vernacular use of French or French creole, the official use of French, the use of the Code Civile, historical rule by France (not Belgium), and membership of the Franc Zone, with Roman Catholicism as a limiting attribute.

Equivalent regions for Spanish and Portuguese would have definitions limited to language (roughly the same extent as historical rule) and the limiting attribute of Catholicism; though with the exception of a few areas in Portuguese West Africa, the linguistic situation is relatively unified, with creolization at a minimum. In extent, the regions are quite different, as Spanish is spoken primarily in a vast contiguous area in the Western Hemisphere, while Portuguese is spoken in sizable isolated pockets around the world. (Portuguese America is simply a cultural version of Brazil; other contiguous Portuguese regions are likewise essentially countries — Angola, Mozambique, Guinea-Bissau, Cape Verde, São Tomé and Príncipe, East Timor. The only exception is in Europe itself.) However, a Latin America can be (de Blij's opinion notwithstanding) usefully defined by the vernacular and official uses of Spanish and Portuguese and the practice of Catholicism in the Western Hemisphere. Membership in Mercosur or whichever broader intergovernmental organization succeeds it (Latin American integration is a spotty process punctuated with grandiose declarations but little actual movement) could eventually help to define a core.[94]

A superregion of Russia — here euphemisms seem easily dispensed with — can be defined by the use of Russian as a vernacular, and as an official, dialect, vernacular use of any eastern Slavic dialect, current rule by the Russian Federation, the maximum extent of

94. If we drop the contiguity or hemispheric requirement, which is, factually, a departure from the attribute definition process, and make Catholicism again a limiting attribute, then we find Iberia itself included in Latin America. This is not as ridiculous as it sounds. While politically and economically Iberia is integrated with the powerhouse of Europe, culturally it is increasingly an appendage to the massive populations of America. As the economies of Latin America develop, Iberia may eventually be quite peripheral to the Latin world. Whether French America belongs to Latin America is debatable, though the same logic would not apply with French included (and in practice, it seldom is).

previous Russian rule (again, anachronistic, and to include the rule de facto in the Warsaw Pact states and Afghanistan), and present membership in the Commonwealth of Independent States or whichever more serious integration institution eventually emerges, with the Cyrillic script and the practice of Eastern Orthodoxy as limiting attributes.

A European superregion, defined by historical European rule, and present vernacular and official use of a European dialect, with Christianity as a limiting attribute, would cover much of the world[95]; but this actually understates the spatial extent of European influence. Consideration of Europe suggests two component superregions. Western Europe can be defined specifically by western Christianity (Roman Catholicism and Protestantism) and the Latin script, while Eastern Europe is defined by eastern Christianity (Orthodoxy) and the Cyrillic script. Eastern Europe would be similar to the Russian superregion, though with different cores. The definition of Western Europe, where government regions are generally stable and empirical, could be enhanced through the consideration of the variable geometries of integration — membership of the EU, NATO, the eurozone, and the Schengen Zone.

Smaller superregions are also identifiable, though less useful at the global scale. As an example, an Abyssinian superregion can be defined by the Ethiopian Semitic dialects, the Ge'ez script, the Ethiopian Orthodox church, and the present and historical extents of the Ethiopian empire.

It might quickly be observed that no large superregion yet defined has its core in sub-Saharan Africa. That is so because few if any *sets* of attributes have spread from a sub-Saharan core. There are linguistic regions of interest across Africa, and a few African dialects, such as Swahili and Lingala, have taken on significance beyond the vernacular. But these produce only single-attribute regions. Local religion, generally animism, cannot be considered a unified whole, is losing ground within Africa, and has effects outside of Africa that would be difficult to use in regionalization (African religion in the Caribbean, for instance, is shared only with parts of West Africa). Pending a better study of religion, the most important measurable attribute to emerge from a sub-Saharan core is race. The African diaspora, as difficult as it might sometimes be to define (to say nothing of the problem of trying to identify race within Africa), is a good deal easier to identify than the

95. And with Christianity as a regular attribute the extent would be nearly the same; the chief exclusion would be Ethiopia, whose Christianity is not a product of European influence. Maronite Christianity in Lebanon is also not the product of European influence, but Lebanon is peripherally European for other reasons.

subtle cultural influences that the diaspora brought with it through the trans-Atlantic slave trade. Of course sub-Saharan Africa had distinct civilizations (a frequent source of superregional identity), but their effects have been largely lost in the flood of European imperialism. Since this impact has been so pervasive, studying sub-Saharan Africa within the framework of Western European, Anglican, French, and Portuguese superregions (as well as Arabic) is reasonable. It does, however, highlight the need to supplement any world-regional framework of superregions with single attributes like language, where the Bantu continuum, the broader Niger-Kordofanian family, the domain of Swahili as a lingua franca, and the widespread Mande and Fulfulde dialects in West Africa help demarcate the human environment.

Human regions

The political and linguistic elements of the study are far from complete. The political data set requires thorough research into all of the world's significant independent governments, over two hundred and fifty of them, to determine the spatial extent of their territorial control. The situation in much of the world is in flux; and the investigation may force a revision of the classification and symbolization system already developed. The linguistic data set is based on the 'Ethnologue' maps; other cartographic sets, including those of Asher and Moseley and the National Geographic Society, could be used to refine the spatial extents. A simple synthetic method might set the extent for any dialect region as the union of the extents from the input data sets. The work to establish mutual intelligibility among the entries in 'Ethnologue', meanwhile, is ongoing.

As a key goal of global interdisciplinary geography is to determine the patterns of interaction among spatial properties in the world, a larger number of spatial properties need to be included in the study. Some of these, such as the various economic properties of trade and currency, will be dependent on the revised political patterns. Others, such as the various natural features discussed in the following section, are often studied independently of the country model, but need to be examined anew in the context of a human geography that is empirical rather than conventional.

Economics is the most significant element of the human landscape that has not been addressed here. Trade and currency regions differ significantly from the country model.

Both are dependent on political control, and so will resemble the regions of the political data set. But the regions in each case will be far fewer, as numerous governments share currencies or customs régimes or both with other governments; the relationships are variable, though often two governments will in fact share both. Currency alone, though, can define at least three sets of regions, as there can be three interpretations of what a single currency means: a minimal interpretation (one region for each circulating currency), a maximal interpretation (one region for each currency and all those currencies largely dependent on it, such as through a fluctuating-exchange-rate band), and a medial interpretation (one region for each currency *value*, including a currency and all those linked to it through a fixed exchange rate). Customs regions would be relatively straightforward (though only relatively, as many official customs unions are not indisputably in full operation). But free-trade regions deserve some consideration as well, considering the common economic space they can potentially create. Examining free trade, though, would potentially entail a set of regions for each good or service of interest, shaded by degree of liberalization, so complicated can the agreements be.

Taxation generally follows political boundaries, with the additional provision that subjurisdictions, such as in the United States, can often create separate tax environments. In all likelihood taxation is too complicated to then group these taxation fragments based on commonalities, though issue-oriented studies might benefit from a consideration of larger regions based on particular tax policies.

Religion is a hierarchical phenomenon, and will produce a regionalization that is likewise, with sects and denominations nested within larger bodies of belief. While in general religion is a well-understood and well-documented phenomenon, there is some room for an empirical approach to improve our understanding. Typically believers classify and name themselves, and while this might often be an accurate representation of their beliefs, it is likely not *always* accurate. If religion were examined by analogy with language, looking at the features of each belief set and evaluating belief sets for commonalities and differences, a classification in contrast to the self-imposed (and conventional) groupings might emerge. This would likely also be hierarchical. But there is also potential value in the regionalization ad hoc based on very specific attributes of religion, very specific tenets that might be in common across many of the recognized religions, where (for instance) socially-conservative or theologically-conservative sects within a recognized religion had more in common with

conservative sects in other religions, while their respective liberal counterparts were better grouped together.

Though not directly related to the spoken language that has been the focus of the linguistic element of this study, writing is obviously a linguistic matter and an important cultural feature. Writing systems are cultural traits that can be used productively to define linguistic regions, either alone or in conjunction with spoken language. The existence of a common writing system may allow cultural items, whether words or ideas, to spread across otherwise-prohibitive spoken-linguistic barriers.

Furthermore, a common writing system may help to unite spoken dialects, and distinct writing systems may help to divide spoken dialects. While spoken language is primary and mutually-intelligible dialects produce a common primary linguistic region, a distinction by writing system is a meaningful distinction. Writing may, therefore, be the real (and only) meaningful distinction between Eastern and Western Punjabi, for instance, or for that matter between Punjabi and Hindi. Likewise, writing may provide a significant distinction between Northeastern Thai and Lao. That does not mean that we should endorse Northeastern Thai and Lao, or Eastern and Western Punjabi, as primary divisions of the human cultural landscape; speech, as stated before, is paramount. But the different writing regions within these speech regions are of interest in our study of the human linguistic situation, possibly more of interest than variations in the speech itself.

One possible model that may emerge from the comparison of human-geographic data sets is that of repeated stimuli in a medium. This presumes a medium that is, at some hypothetical beginning, in a uniform state. The first stimulus propagates through the medium to a certain extent. Within that extent, the medium is transformed by the stimulus, so that two media are now present where before only one existed, and there is a boundary or transition zone between them. A second stimulus propagating through either medium will behave differently at the boundary than in the original medium; it may well fail to transcend the boundary, and if some remnant of the stimulus does cross the boundary, it will behave in yet another way, possibly (as the analogy would suggest) with diminished energy. But in any case, each medium will again be transformed by the stimulus, leaving at least one new medium and possibly a new intermedium boundary. Two possible systemic effects might emerge from this process. The first is that the effects of at least some past stimuli will have common extents, at least approximately, where each stimulus encountered an intermedium

boundary and was unable to propagate in the distal medium (in other words, was unable to spread through the distal culture). The second is that a future stimulus might propagate successfully in some media but not in others.

Physical regions

Leaving behind the human side of the discipline, we often find that geography is consistently empirical. Physical geography bears a strong relationship to the physical sciences, where empiricism is much stronger.[96] As a result, it would be fair to say that physical regions often already follow the pattern of attribute-defined, inquiry-specific, variable regions.

The division of the world's land into continents and its water into oceans is clearly a conventional regionalization that cannot be supported by qualitative methods; and even quantitative methods may fail. Europe obviously cannot be empirically divided from Asia; and a natural-break quantitative method to divide Africa from Eurasia would render the Sinai Peninsula an intercontinental No Man's Land.[97] Similarly, the American landmass narrows not conveniently once, but inconveniently twice. Focusing on an isthmus is natural. Choosing between two is arbitrary, since it is the existence of an isthmus in the first place that is used to justify the separation of a landmass into continents. Even more confoundingly, the world's sea is all connected; the Bering Strait may suggest an obvious dividing point, but the Drake Passage is much, much larger, and the other oceanic "boundaries" are impossible to find. Australia could travel lengthwise between the Indian and the Atlantic.

Hydrology has divided the world into drainage basins, which are hierarchical bounded regions defined by the drainage path or surface-water catchment basin into which all the surface water in the region drains. While drainage basins are accurately described as bounded by their watersheds[98], the drainage path or catchment basin itself will naturally be

96. Natural scientists have their points of convention and faith; they are, however, far fewer and less important than those encountered in the social sciences.

97. What is meant is that the curve of all possible distances across Eurasia, measured from sea to sea and weighted by (divided by) distance along the coast, comes not to one nadir but two. An isthmus can be identified by the local minimum of the shortest overland distance over coastal distance, which for round "continents" would be $(2r \sin(\theta/2))/\theta$.

98. The term 'watershed' originally referred to the linear feature (a ridge) that determined the direction of surface water flow, shedding water one way or the other. It has come to be used, recently and in some circles

viewed as a central feature of the region, such that, in the vernacular, a radial region may be defined by the feature as well. (The North American Great Lakes region is more frequently defined by proximity to the lakes, to far exceed the Great Lakes drainage basin in many directions.) Because the drainage system is hierarchical, with one path draining into another, or into a catchment basin (and, in some cases, a catchment basin itself draining into another path or catchment basin), drainage basins will manifest the same hierarchy, so that the Ohio drainage basin is a smaller region exactly within the Mississippi drainage basin, and the Mississippi drainage basin comprises exactly a certain number of these smaller regions.[99]

The geological world is already well-defined by tectonic plates, world-scale regions bounded by faults. These tectonic regions are the direct result of empirical observation and long evolution of theory. However, geologists also make use of radial regions centered on the faults themselves (an orogenic belt, for example, or a subduction zone) to understand environmental effects and guide human activity with regard to the faults.

The traditional biogeographical approach, according to Glen MacDonald, classifies the world into biomes according to climate and vegetation structure. These large regions (or region types; they are hierarchically divided into formations and then communities) are not dependent on individual species, such that two areas can be part of the grassland biome regardless of how closely related the dominant grass species in each area are. The components of a biome are equivalent and analogous. This makes biomes not only useful, but relatively easy to recognize and understand. An alternative involves considering the distribution of plant and animal families. Philip Sclater and later Alfred Wallace (again as MacDonald describes) divide the world into faunal macroregions based on species relationships, in a significant departure from the previous regions dependent on climate and location. MacDonald also describes subsequent regionalizations of the world using the same principles but focusing on plant species. Finally, he illustrates the location of biogeographic borders, such as (Alfred) Wallace's Line. The concept of transition zones, as Gumperz (1961) describes, could well be applied in the case of flora and fauna, since the possible lines

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almost exclusively, as the standard term for a drainage basin; as a result, the term 'watershed break' is now used for the dividing ridge.

99. As the oceans cannot be defined, from a global perspective the oceanic drainage basins may be meaningless. The watersheds between them, the continental divides, may still have meaning in local contexts, though, and a targeted selection ad hoc of particular basins may be of limited use; a person may wish, for instance, to consider the land that drains into the Arctic. But this will always entail arbitrary inclusion and exclusion.

for dividing (as Wallace's Line does) the Oriental and Australasian faunal regions are numerous, and coincide broadly at the global scale but are sometimes far apart in local terms.

Various organizations, including the US Environmental Protection Agency (EPA), the North American Commission for Environmental Cooperation (CEC) to which it contributes, and WWF (the World Wildlife Fund), divide the world, or parts of it, into ecoregions. These regions are generally presented as bounded and hierarchical (the EPA/CEC regions, for instance, have Level I regions, comprising Level II regions, comprising Level III regions, comprising Level IV regions), though they are likely based on a more sophisticated understanding, in which each ecoregion is in fact a superregion defined by the exact extent of certain key populations, the domain of various plant and animal species, perhaps, as well as a selection of geological attributes. The CEC specifically describes taking a holistic approach, focusing on "enduring components" [p5], such as vegetation, soil, and landforms (notably, it also invokes the term 'art' to describe the judgement inherent in selecting attributes to use in regionalization). Some ecoregions can be essentially coterminous with geomorphological regions, or landforms. A glance at a relief map of western North America reveals several obvious topographical regions — California's Central Valley, the Snake River Plain, the Columbia River Plateau, the Willamette Valley — all of which are Level III ecoregions in the CEC regionalization.

Local regions

Working at the global scale tends to force the identification of large, sweeping regions. But the functional space in which most humans exist is much smaller. Human individuals operate, generally speaking, within the radial region (originating with themselves) defined by intelligibility with the dialect(s) they can use, and the distance they can travel while still returning home the same day. Completely-closed governmental borders are obviously an obstacle, though communities near a crossing in a partially-closed border often transect the border. (Open borders, as in the Schengen Zone, have no significant impact on everyday existence.) Though we cannot construct a region around every individual, we can approximate this human environment by considering the extent of vernacular dialects and local linguae francae, combined with areas of continuous settlement (particularly for the

ever-increasing urban population), and bounded by any closed governmental borders that intersect.

Humans may travel up and over mountains, but dense settlement does not; both urban and rural dwellers tend to live in lowlands. (Those that do not tend to be cultural specialists; Arab settlement gives way to the Iranian language family where the mountains begin, and Indo-Aryan largely does the same from the other direction). For this reason, some effective regional units will be at least partially geomorphological. The Ferghana Valley and the Vale of Kashmir contain concentrated settlements, as do the Po River-Venetian plain and the Sichuan Basin[100]. In the United States, settlement concentrates on the lowland edge of landforms, in the case of the Wasatch Front and the Front Range Corridor, or within lowland forms, as in the Puget Sound Lowland and the Willamette Valley, all four of which correspond to CEC Level III ecoregions or their boundaries, and contain the bulk of the population of, respectively, Utah, Colorado, Washington, and Oregon states.

Since human regions are primarily settlement-oriented, hence radial, and can therefore never achieve contiguity, a regionalization defined in this way will lack the territorial neatness of one-to-one cardinality between place and region. Nor should such neatness be required. This regionalization must though, by definition, account for the entire human population. Relatively-small linguistic regions would likely function as single units regardless of the continuity of settlement. Most rural residents are clearly oriented towards or in the hinterland of a single settlement of some size, whether this is a metropolitan area or a market town (the classical functional region). A pure rural region is certainly possible, but a more common occurrence, if no orientation towards a single concentrated settlement can be identified, would be a rural area that effectively falls within more than one radial region. It is, it should be remembered, in the nature of radial regions to lack precise boundaries.

The distant horizon

In the long term, the methods applied here can be used to revise our historical geographies. The methods, while possibly in need of further revision, are intended as a priori as well as a posteriori — that is, they are intended to address not merely the known

100. The Sichuan Basin has traditionally been a unit, a vernacular region, otherwise known as Sichuan; the current administrative province of the People's Republic includes territories resulting from the incorporation and partition of Tibet.

situations in the world, but the *possible* situations in the world. In particular, historical geographies are often centered on political entities, which can be depicted with a government-based approach. But historical geography, though taken as the functional equivalent of the other subfields of geography, in fact partakes of them all. It is or at least should be, to use the language of this study, the application of various specific inquiries to historical data; there would be a historical geography of language, a historical geography of trade, a historical geography of war, and inquiries even more specific, even if we are considering history only in the strictest sense, as the written record of humanity. Other fields of research into the past, such as archaeology, paleontology, and geology, would have their own geographies, all of which could be carried out using an attribute-definition approach.

The incorporation of these attribute-based studies into a descriptive atlas, using combinations of maps to display individual attributes and complex interactions, and addressing the complex issue of nomenclature, is a distant goal. And obviously the employment of more appropriate (often, more specific) regionalizations in and out of the academy, even in small part, would be a desirable outcome of this analysis. But another purpose of an explicit method of regionalization is to urge the collection of the very information so often missing in this study. We need new data, and we need data of a particular sort. The data collection of the future would be more useful if guided by a specific idea of what data are missing and how new data will be used, whether provided by this regionalization method or another.

Finally, Hart reminds us that more than theory is needed, and that dividing the world into regions is a small part of the geographer's task; the far greater part, the more important, is understanding these regions. He quotes with seeming approval a personal communication from Torsten Hägerstrand which includes a statement that "the study of bounded areas, where phenomena exist shoulder to shoulder, reveals relationships that systematic approaches are bound to overlook." [p18] This shows no preference for defining areas by phenomena, and possibly a preference for not doing so, as if to place ourselves at the mercy of chance in hopes that it will reveal something for which we were not looking. This, indeed, may happen; though it is not a persuasive argument for deliberately choosing

arbitrarily-bounded areas to study, and cannot, ex post facto, justify the insistence on studying countries or the canonical world regions.

But regardless of how the world has been regionalized, in the end someone must actually fill in the framework; someone must tell the story. This is what Hartshorne, and Hart, mean by "regional geography"; it is the rough equivalent of area studies, the attempt to understand the disparate phenomena of an area — though in this case, the region is not one of a predetermined roster of "world regions", but any generic region, at any scale, so long as the geographer is making an attempt to account for all the phenomena within that region. It is the sort of geography familiar to so many from the work of the National Geographic Society: a geography of content.

But as the world should indeed be seen as the equivalent of a region for such study, global geography can and must be a regional geography. As there are world historians, there must be world geographers; Hartshorne's notion of history and geography alike as integrative disciplines holds that a general approach to a particular region, even if that region is the world, is necessary to understand it, through the integration of sundry elements that give that region its particular character.

'Geography', etymologically, is the record, and the recording, of the Earth. While there is no doubt that modern geographers do work that fits into that definition, the definition is broad enough to encompass *all* terrestrial study. There is no study concerned with Earth that cannot be classified as geography, and as geographers we would do well to accept for ourselves the most expansive view of our discipline, not to claim or reclaim the disciplines that choose to be elsewhere, but to integrate into our own discipline everything that we need to properly understand, and help others to understand, the place in which we live.

APPENDIX A: TECHNICAL TERMS

bounded region: a region conceived as contained within boundaries
country: one of a limited and fixed number of regions in the world, conceived as complete, exclusive, and hierarchical
complete territoriality: comprehensiveness in the regionalization of a given space, and in particular, the non-Antarctic land surface of the world
complex mutual intelligibility: mutual intelligibility in which each participating dialect is intelligible to at least one other, but not all others
consensus line: the coincidence of two lines of control, whose respective governments agree on the location; an agreed political border
dialect: the intersection of two or more idiolects; a language variety
dialect continuum: a set of dialects exhibiting complex mutual intelligibility, or the space in which they are used, where language changes gradually over distance
exclusive territoriality: the lack of overlap in the regionalization of a given space
fixed line: a linear geographic feature (and its cartographic representation) whose location is permanent
government: an organization that controls land and the population and resources thereon, control being "rule making and enforcement authority" (Thomson)
hierarchical: participating in a structure in which all units, if subdivided, comprise complete and exclusive subdivisions
idiolect: the set of all symbols and logics understood by an individual
limiting attribute: a defining attribute applied only within the extent of other defining attributes
line of control: the unidirectional limit of political control by one government (and its cartographic representation)
linguistic: concerned with the inherent properties of language, with language in and of itself
mutual intelligibility: inherent ability of two or more dialects to be understood by each other's users
open border: a line of control whose government permits entry and exit freely
political border: the place at which the governmental situation changes from one state to another; always coincident with at least one line of control
radial region: a region conceived as radiating from an origin, which may be a point (as with a city), a line (as with a river or a coastline), or a smaller region
reference line: a cartographic representation of a theoretical or historical linear geographic feature
region: any two-dimensional fragment of the Earth's surface, whether land or water
simple mutual intelligibility: mutual intelligibility in which each participating dialect is intelligible to all others
state: the territory under the control of a government

APPENDIX B: GOVERNMENTS AND GOVERNMENTAL REGIONS

Regions are listed here by common name, with clarifications where necessary. Information presented is the best available, current to the summer of 2009. Such information will often be problematic, as unrecognized governments are not the subject of consistent reporting; investigators fail to ask the relevant questions, and sources fail to report the relevant information. There is also something of a reverse bias (or overcorrection) resulting from reporting problems. Sources are generally adequately empirical on the absence of recognized-government control; that is, a statement that a contending force has taken and held control of territory is generally based in fact. But these sources are generally not adequately empirical on the resumption of recognized-government control; for example, a statement that a contending force has relinquished control is often based on assertions alone, such as the signing of a peace deal, or a declaration of willingness to demobilize. In some cases, then, it may be easier to say that a situation has deviated from the purported reality than to say that is has returned to alignment.

Franchise territories matching governmental regions

- Canada.
- United States. Significant federalism just short of decentralization.
- México.
- Guatemala.
- Belize.
- Honduras.
- El Salvador.
- Nicaragua.
- Costa Rica.
- Panamá.
- The Bahamas.
- Cuba.
- Jamaica.
- Haiti.
- The Dominican Republic.
- Antigua and Barbuda.
- St. Kitts and Nevis.
- Dominica.
- Saint Lucia.
- St. Vincent and the Grenadines.
- Grenada.
- Barbados.
- Trinidad and Tobago.
- (Western) Guyana.
- Suriname.
- Brazil.
- Bolivia.
- Chile.
- Argentina.
- Paraguay.
- Uruguay.
- Iceland.
- Andorrà. Generally accepted as a distinct franchise despite historical status as condominium.
- Norway.
- Liechtenstein.
- Vatican City.
- San Marino.
- Croatia.
- Montenegro.
- Macedonia.
- Albania.
- Ukraine.
- Belarus.
- Turkey.
- Iran.
- Kuwait.
- Saudi Arabia.
- Bahrain.
- Qatar.
- Oman.
- Yemen.
- Jordan.
- Libya.
- Tunisia.
- Mauritania.

- Cape Verde.
- The Gambia.
- Guinea-Bissau.
- Guinea-Conakry.
- Sierra Leone.
- Liberia.
- Burkina.
- (New) Ghana.
- Togo.
- Bénin.
- Nigeria.
- Cameroon.
- Equatorial Guinea.
- São Tomé e Príncipe.
- Gabon.
- Rwanda.
- Burundi. Has only recently reintegrated the last contending force.
- Tanzania.
- Zambia.
- Malawi.
- Mozambique.
- Zimbabwe.
- Botswana.
- Namibia.
- South Africa.
- Lesotho.
- Swaziland.
- Madagascar.
- Mauritius.
- Seychelles.
- Kazakstan.
- Uzbekistan.
- Türkmenistan.
- Kyrgyzstan.
- Bhutan.
- (East) Bangladesh.
- Maldives.
- Sri Lanka. Divided for decades between Sinhalese and Tamil governments, recently reunited by the defeat of the Tamil Tigers. May or may not face continued insurgent terrorism.
- Mongolia.
- North Korea.
- South Korea.
- Japan.
- Vietnam.
- Cambodia.
- Laos.
- Malaysia.
- Singapore.
- Brunei.
- Indonesia.
- East Timor.
- Australia.
- Solomon Islands.
- Vanuatu.
- Fiji.
- New Zealand.
- Belau.
- Micronesia.
- Marshall Islands.
- Kiribati.
- Nauru.
- Tuvalu.
- (Western) Samoa.
- Tonga.

Uncontested divergence from franchise

- Greenland; the Faroe Islands. Recognized as belonging to the franchise of Denmark, but largely independent with Denmark's consent. Greenland's autonomy has recently been significantly enhanced. Neither state is a member of the European Union or implements its large body of law.
- United Nations. Not recognized as a franchise of its own, but controls small amounts of territory on Manhattan and Cyprus. Governed as condominium of recognized states, particularly the permanent members of the Security Council.
- European Union. Government is partially independently elected, and partially controlled by member governments, and shares with them control over the legal environment of the member territories. Franchises that participate in this system directly (members) are Ireland, Britain, Portugal, Spain, France, Belgium, the Netherlands, Luxemburg,

Germany, Denmark, Sweden, Finland, Malta, Italy, Austria, Czech Republic, Slovakia, Poland, Lithuania, Latvia, Estonia, Slovenia, Hungary, Bulgaria, România, Greece, and (Greek) Cyprus. Much of EU statutory law (the acquis communautaire) is also implemented by the additional European Economic Area members, Norway, Iceland, and Liechtenstein.

- Monaco. Recognized as a franchise and largely independent, but under a degree of control from France.
- Switzerland. Recognized as a single franchise, but the cantons of the federation have a great deal of autonomy.
- Mount Athos. Not generally recognized as independent from Greece, but granted effective independence.
- United Arab Emirates. Loose federation of the following seven governments: Abu Dhabi, Dubai, Ajman, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain. Ajman shares control of some territory with the Oman franchise, and Fujairah and Sharjah share control of a corridor.
- Comoros. A strong federal system among the islands of Ngazidja, Mwali, and Nzwani, instituted in part because of Nzwani's past, successful attempts to secede, at least temporarily.

Contested divergence from franchise

- Colombia-Venezuela-Ecuador. Three recognized franchises; Ecuador and Venezuela control most of their franchise territories, but not recognized border regions, as powers contesting with Bogotá pass the borders routinely. Three main contesting governmental forces have existed for decades, the FARC, the ELN, and the AUC. The last is now perhaps best considered a vestigial movement of the same paramilitaries who composed the AUC. All three contesting forces as well as numerous drug cartels operate outside of Bogotá's control.
- Perú. Contesting part of the franchise territory, specifically the highlands, with Sendero Luminoso and various drug-trafficking organizations.
- Italy. The Mafia operates outside of Italian law, particularly in the south.
- Bosnia-Herzegovina. Weak federal entity comprising the Federation of Bosnia-Herzegovina and the Republika Srpska, which are largely independent of each other, though not independent in an absolute sense, as government is partially controlled by a UN/EU representative. A third subdivision, Brčko, is officially a part of both elements but in practice governs itself.
- Serbia-Kosovo. The latter is independent and partially recognized as such, though more franchise states refuse recognition. Conversely, Serbia retains control in an area generally described as "north of the Ibar River", but states recognizing Kosovo's independence do not recognize this. Influence of Serbia elsewhere limited to blocking relations with some states, and debatable control within small Serb-populated enclaves. The independence of Kosovo, like Bosnia, is limited by UN/NATO presence.
- (Eastern) Moldova-Transdniestria. The latter is recognized as a part of the Moldovan franchise, but has long been independent.
- Russia-Georgia. Russia controls Abkhazia in part, and South Ossetia probably in full, though both are recognized as part of the Georgian franchise. Both had been

independent for years, and Abkhazia arguably still is. Chechnya, recognized as part of Russia, had been independent as well, though only a vestigial contesting force remains.

- Cyprus. Recognized as a single franchise, held by the present Greek government of the south, but Northern (Turkish) Cyprus is independent, with military support from Turkey.
- Armenia-Azerbaijan. Nagorno-Karabakh is recognized as part of Azerbaijan, but clearly not controlled by it. Independence is a possibility, but more likely the territory and adjacent lands are controlled by Armenia.
- Iraq. Controlled by numerous contesting forces, including the recognized franchise holder. Kurdistan participates in the federal structure, but is effectively independent and has been for many years. Several franchise holders from elsewhere, notably the United States, control or help control territory. Various sectarian and political militias, as well as al-Qa'idah, contest control of territory. Some control is ceded by the recognized government to the clergy in Najaf.
- Syria-Lebanon. Syria presumably still has some degree of control over the recognized territory of Lebanon, which it ruled for decades. An independent government holds the franchise for Lebanon, but among its elements is Hizbullah, which has independent control of territory in the south and in parts of Beirut.
- Palestine. Three forces contest control over the former mandate land. Israel controls all the territory in its franchise, and all land to the west of the West Bank wall. East of the wall, it shares control with a Fatah-controlled Palestinian Authority. The Gaza Strip is controlled by Hamas, though Israel exerts influence on its ability to interact with the world.
- Senegal. A contesting force in Casamance is possibly transitioning out of existence.
- Côte d'Ivoire. A single franchise, divided into three. A small territory in the west and a large territory in the north were held by the New Forces; the recognized government, based in the south, comprises elements of the previous governments of north and south.
- North and central Africa. Sixteen franchises are recognized in this contiguous area: Egypt, Sudan, Eritrea, Ethiopia, Djibouti, Somalia, Kenya, Uganda, Congo-Kinshasa, the Central African Republic, Chad, Niger, Mali, Algeria, Morocco, and the Western Sahara. Egypt, Eritrea, Morocco, and Kenya have clear borders, though none matching the recognized borders. Morocco controls most of the recognized franchise of the Western Sahara. Polisario, based in the recognized territory of Algeria, controls the land east of the Berm. Three unrecognized but relatively-stable states exist in the area, Southern Sudan, Somaliland, and Puntland. One force, the Lords Resistance Army, was formerly based in northern Uganda but now ranges over recognized borders of four franchise territories. The franchise holders of Chad, Sudan, Ethiopia, Djibouti, Somalia, the Central African Republic, Congo-Kinshasa, Niger, Mali, and Morocco face active contesting forces within their recognized territories (all but Somalia in the hinterlands distant from the recognized capital), currently weak in the case of Djibouti and the CAR but not weak in recent years. In the other cases, large amounts of territory are currently out of the recognized government's control, and in the extreme case of Somalia, the recognized government has, and has long had, virtually no territory under its control.
- Congo-Brazzaville. A separate government existed in the Pool region for years, and appears to be lingering in the form of banditry.
- Angola. The exclave of Cabinda is at least partially outside of Angolan control.

- Tajikistan. An earlier centralized political revolt has been reduced to banditry and warlordism.
- Afghanistan-Pakistan. The Pashtun-based Taliban control both sides of the recognized border, and are the most powerful indigenous force on the Afghan side. A political force also contends in the Baluchistan province of Pakistan, while control in Afghanistan is shared among a weak recognized government, numerous foreign forces including the US, and a series of regional armies residual from the mujahideen.
- India-Nepal. In addition to the two franchise holders, various Maoist/Naxalite forces control much of the south and east of the subcontinent. Nepal's Maoists controlled the bulk of the franchise territory before winning a plurality in elections and temporarily governing the state; their ouster from government was at least partially related to the refusal of the traditional army to incorporate the Maoist army, which remains.
- Burma. Shares the recognized territory with numerous contesting governments, representing non-Burmese peoples, including the Karens, the Kachin, and the Wa.
- Thailand. Ethnic-Malay Muslims in the south have rebelled for decades; their strength has increased in recent years from an earlier low.
- China and Taiwan. Recognized as a single franchise, but a clear division of control has existed for six decades.
- Philippines. The effectively-independent area of Bangsamoro may be in the process of reintegration with the Philippines, under terms of autonomy.
- Papua New Guinea. Bougainville has been independent and maintains, at least, a significant degree of autonomy.

Special border cases

The Schengen Agreement, a voluntary instrument of the European Union, has a membership including most EU members (the exceptions are Britain, Ireland, Romania, Bulgaria, and Greek Cyprus), as well as Switzerland, Norway, Iceland, Greenland, and the Faroe Islands. All internal borders are open. Open borders also exist with Monaco, San Marino, and the Vatican, though not Mount Athos.

A large number of governments are surrounded entirely by fixed, coastal borders, by virtue of controlling one or more land masses in their entirety and no territory on the mainlands of the Old and New Worlds. These island states are Greenland, Iceland, the Faroe Islands, the Bahamas, Jamaica, Antigua and Barbuda, St. Kitts and Nevis, Dominica, Saint Lucia, St. Vincent and the Grenadines, Grenada, Barbados, Trinidad and Tobago, Malta, Madagascar, Cape Verde, São Tomé and Príncipe, the Comoros, Mauritius, the Seychelles, Bahrain, the Maldives, Sri Lanka, Singapore, Australia, New Zealand, Solomon Islands, Japan, Taiwan, Vanuatu, Fiji, Belau, Micronesia, the Marshall Islands, Kiribati, Nauru, Tuvalu, (Western) Samoa, Tonga, and possibly Bougainville.

Desert regions create uncertainty about control, as in the case of the Sahara, and even uncertainty about franchise territories, as in the case of the Arabian desert. Interior borders are undefined and uncontrolled among Saudi Arabia, Yemen, Oman, the United Arab Emirates, Kuwait, and Iraq.

APPENDIX C: VERNACULAR DIALECT REGIONS

Following principles outlined in the linguistic chapter, the world can be divided into the following regions, among others, defined by vernacular dialect.

Unvarying at all scales

- The Sinitic continuum.
- The Romance region, with Balkan Romance presented as a distinct outlier and western Romance presented as a single continuum, but with separate Spanish, Portuguese, and French (including French creole) regions outside of the European context.
- The English region, including English creoles.
- The Bantu continuum.
- The Turkic region, with no subdivisions in the main contiguous portion of the region.
- The Japanese region.
- The Korean region.
- The northern Slavic continuum.
- The southern Slavic continuum.
- The Malay region, including all local forms.
- The Mande region.
- The Arabic region, with no subdivisions in contiguous portions.
- The Javanese region.
- The Aymara region.
- The Eskimo-Inuit continuum.
- The Eastern Cushitic region with three subdivisions, Oromo, Afar, and Somali.
- The German-Dutch continuum.
- The North Germanic region, with no subdivisions for mainland Scandinavian.
- The Mongolian region.
- The Tuareg region.
- The Berber region.
- The Yoruba region.
- The Hausa region.
- The Afrikaans region.
- The Malagasy region.
- The Dezaga-Tedaga region.
- The Zarma-Dendi region.
- The Kanuri region.
- The Gbe region.
- The Baltic region, with two subdivisions, Latvian and Lithuanian.
- The Kartvelian region.
- The Basque region.
- The Hebrew region.
- The Greek region.
- The Albanian region.
- The Armenian region.

Subdivided at narrower scales

- The Dravidian region.
- The Indo-Iranian region, subdivided into Kurdish, Iranian (including Dari and Tajiki), Baluchi, Pashto, Sinhalese, and Maldivian-Mahl regions, and a single subregion for the Indo-Aryan continuum, noting the discontinuity between western Indo-Aryan and Marathi.
- The Tibeto-Burman region.
- The "Senegambian" region.
- The Tai-Kadai region, with no subdivisions in the main contiguous portion of the region.
- The Finno-Ugric region, with no subdivisions for contiguous Baltic-Finnic.
- The Quechua region.
- The Oceanic region.
- The Adamawa-Ubangi region, with major subdivisions of Zande-Nzakara, Banda, Gbaya, Ngbandi, and Baka.
- The Ethiopian Semitic region with three main subdivisions, Amharic, Tigrinya, and Tigré.
- Three Philippine regions: northern, central, and southern.
- The Mayan region.
- The Mon-Khmer region.
- The Nilotic region.
- The Tupi-Guarani region.
- The Gur region.
- The Kru region.
- The North Caucasian region.
- The Hmong-Mien region.
- The Ijo/Ijoid region.
- The Kwa region.
- The Khoi-Bushman region.

APPENDIX D: ANNOTATED SOURCES FOR THE LINGUISTIC COMPARISON

K. Alexander **ADELAAR**.

States in a footnote, p568, that "Embaloh, Kalis and Taman form a mutually intelligible group of dialects called Tamanic." States, p580, that Mualang and Keninjal are mutually intelligible with Iban, and Kendayan with Selako.

Alexandra Y. **AIKHENVALD**.

A footnote, p189, presents Rivet's conclusion that Guambiano, Totoró, and Polindara [?] are mutually intelligible.

Karl **ANDERBECK**.

A specific response to Ethnologue; consolidates the nine languages of Lampungic into three: Lampung Pesisir, Abung, and Komering. (Web abstract: http://email.eva.mpg.de/~gil/alt/abstracts.pdf)

D.W. **ARNOTT**. Review of Gilbert Donald Schneider.

Schneider describes West Cameroon English pidgin as intelligible with that of Sierra Leone, the Gambia, and Nigeria.

Richard B. **BALDAUF** and Robert B. **KAPLAN**, eds.

States, p80, that Khokhola and Lomwe would be considered one language on the basis of mutual intelligibility. States, p84, that Nyiha and Lambya are mutually intelligible. Chisukwa is a dialect of Ndali understood by the Nyiha, p85. Reports but disputes Werner's claim that Sena and Tete (Nyungwe) are dialects of Nyanja, p86. Notes, p89, that Machinga is a dialect of Yao. Identifies, p90, seven subgroups of Lomwe: Muhipiti, Makua, Meeto, Nyamwelo, Mihavani, Khokhola, and Athakwani. Divides, p210, Nguni into two groups, Zunda (isiXhosa, isiZulu, and (Southern) isiNdebele) and Thekela (siSwati, (Northern) isiNdebele), all mutually intelligible.

Felix **BANDA**.

Shows, p13, a table of mutual intelligibility of vocabulary. Tambo and Lambya are 94%.

Helen Ullrich **BAYLIS**. Review of Stephen A. Tyler.

Quotes Tyler stating that Koya is a Gondi language and is mutually intelligible with Hill Maria Gondi, and speculating about the existence of a continuum among all Gondi and Koya dialects.

Pierre **BEC**.

Bec implies, p117, that obstacles to Occitan-Catalan intelligibility are primarily orthographic. He states, p123, that the various Occitan dialects are mutually intelligible "(within limits to be sure)". Throughout he describes Occitan as a dialect continuum with Languedocien at its center, and Catalan being as close as Gascon.

Simon **BELASCO**.

He lists Languedocien, Provençal, Limousin, Auvergnat, and Gascon as dialects of Occitan, p996. He describes the Croissant, where French and Occitan blend gradually into each other, p999-1000.

Mahé **BEN HAMED**.

In the online version (http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1599877), Ben Ahmed lays out a lexicostatistical analysis that shows groupings of thirty sampled local varieties, and concludes that dialect continuum is the best model, specifically arguing against the tree-branch model. The continuity results from borrowing and from diglossia, the higher

level of this historically corresponding to modern Mandarin. Ben Hamed did find distinction between northern groups (Mandarin and Wu), central groups (Xiang and Gan), and southern groups (Min, Hakka, and Yue), but found indistinct boundaries, and examples of unexpected division (some Wu being northern-oriented, some being southern-oriented).

Patrick R. **BENNETT** and Jan P. **STERK**.

Not reviewed. Kenneth Olson attributes here the idea of a Gur-Adamawa-Ubangi continuum.

Jonathan David **BOBALJIK**.

In an article following Dorais, he reiterates the claim of an Inuit continuum from Alaska to Greenland.

Karen M. **BOOKER**.

States, p406, among other relationships, that Choctaw and Chickasaw are mutually intelligible.

David **BRADLEY**.

Describes, p310, a dialect chain from Moken to Moklen, and dialect continua involving Northern Zhuang with Buyi, and Southern Zhuang with Nung, Tay/Tho, and Caolan. Notes, p312, that Lao speakers in northeastern Thailand number 25 million and use Lao "as a diglossic Low", with central Thai as High. Describes, p316, Katu as a single language with dialects crossing the Vietnam-Laos border, Ong and Yir as "one language, two groups with slightly different dialects", Kriang, Klor, and Ngeh as different names for one linguistic group, Brao/Krung/Kravet/Su as a dialect cluster, Oi/Sok/Sapuan/Cheng as one language (not mentioning The).

Michael **BRANCH**.

Branch states, p593, that Finnish "is one of a group of closely related and to some extent mutually intelligible languages, known collectively as Baltic-Finnic"; lists Finnish, Estonian, Karelian, Vepsian, Ingrian, Votic, and Livonian.

William **BRIGHT**. (1963)

In an abstract of Desmond Derbyshire's 'Notas comparativas sôbre três dialectos Karíbe' (p265), Bright notes that Derbyshire identifies Hixkaryana, Katxhuyana, and Waiwai as mutually intelligible.

William **BRIGHT**. (1993) Review of Bruce Mannheim.

Bright apparently concurs with Mannheim's classification of Ayacucho-Chanka and Cuzco-Collao as dialects of the same language.

Mekuria **BULCHA**.

Speaks throughout of Oromo as a single language and "unifying and identifying element of the nation".

Richard **BURGHART**.

Citing Grierson, Burghart states, p776, that Maithili is mutually intelligible with Bhojpuri and Magahi.

Robbins **BURLING**.

The author, based on his own field work, divides Bodo into three divisions, Koch, Garo, and Bodo proper, and Garo into "a number of mutually intelligible dialects", p434. He states that "Bodo proper consists of a number of dialects (said to be largely if not completely mutually intelligible)", p435.

Jasper **BUSE**, Raututi **TARINGA**, Bruce **BIGGS**, and Rangi **MOEKA'A**.

States on page v that all dialects of Cook Islands Maori are mutually intelligible.

Kun **CHANG**. Review of Ernest E. Heimbach.

States, p503, that White Meo and Green Meo are mutually intelligible.

Andy **CHEBANNE**. (2003a)

States that a dialect continuum was observed in the entire group in the nineteenth century; the languages are still highly mutually intelligible, though Lubedu and Kgalagari can be excluded on linguistic grounds, p75-8.

Andy **CHEBANNE**. (2003b)

Many (unspecified) Botswanan Khoi/Bushmen languages are part of a dialect continuum, and mutually intelligible, p59. Jun/hoan and Kx'au//ei are dialects of single language, p66.

Viacheslav A. **CHIRIKBA**.

Lists several Caucasian continua, p60: Adyghe-Ubykh-Abkhaz-Abaza-archaic Kabardian; Bal and Lentekh Svan-Megrelian-Laz-Georgian; Ingush-Chechen-Bats; Andic; Tsakhur-Rutul-Archi-Lak-Dargi-Aghul-Tabasaran; Lezgi-Khinalug-Kryz-Budukh-Udi; also two "clusters": Bagvala-Chamala-Karata-Botlikh-Godoberi and Lak-Dargi.

James T. **COLLINS**.

States, p77, that there is only one indigenous language on Taliabo, of which Mangé (including Saboyo) and Kadai are dialects, and continuous rather than discrete.

Bernard **COMRIE**. (1990a)

Comrie describes Danish, Norwegian, and Swedish as mutually intelligible, and cites the Dutch-German dialect continuum, p3.

————. (1990b)

Comrie refers to Serbo-Croatian throughout as a single entity. Bulgarian and Macedonian are mentioned as separate entities but always in tandem.

————. (1990c)

"Although the three languages [Russian, Ukrainian, and Belorussian] are now considered distinct literary languages, they are very close to one another, with a high degree of mutual intelligibility." (p329) The phonological discussion, p331-2, places Belorussian as intermediate between the other two, and often notes that subdialects of Russian are more like Ukrainian or Belorussian than like other subdialects of Russian.

Greville **CORBETT**.

Corbett throughout treats Serbo-Croatian as a single dialect. He describes three subdialects which in no way follow political or confessional boundaries, notes that one of the three (Štokavian) has largely supplanted the other two, and further divides this into three subdialects which in no way follow political or confessional boundaries. No part of his discussion supports a division into Serbian, Croatian, and Bosnian. (Shtokavski is listed as a subdialect for both Serbian and Croatian in 'Ethnologue'.) A continuum is suggested, p395, where extreme northern Kajkavian is said to share "several features with Slovene"; the Prizren-Timok dialects of Old Štokavian border on and are transitional to Bulgarian and Macedonian; the Kosovo-Resava dialects "are between the Prizren-Timok dialects and the rest of the Štokavian dialects, and share features with both."

David W. **CRABB**.

States from his own comparative studies that Nnam and Ekajuk are mutually intelligible.

W.A. **CRABTREE**.

Crabtree states, p505, that Shilluk is mutually intelligible with Shuli and with Luo, despite being separated.

Sara **DAVIS**.

Davis says, p179, "While Thai and Tai Lüe are separate languages, northern Thais and Sipsongpanna Tai Lües can often communicate" but "most central Thai speakers have difficulty understanding Tai Lüe".

William J. **DE REUSE**. Review of Bruce Ingham.

Though de Reuse disagrees, Ingham claims "much mutually intelligibility" among Dakota-Lakota, Stoney, and Assiniboine.

David **DECAMP**.

"There are four major dialects of French creole in the Caribbean (all mutually intelligible): Haiti, French Guiana, Louisiana, and the Lesser Antilles". (p28) "... all dialects of creole French, including those in the Indian Ocean, are mutually intelligible" (p30; the claim is repeated, p36).

Scott **DELANCEY**.

Refers to Yi (Lolo) as a single language, p800. Calls Karen "Several closely related dialects spoken in eastern Burma and adjacent parts of Thailand", p801.

Karl W. **DEUTSCH**.

He describes, p537-8, the West Germanic continuum clearly, places Macedonian between Serb and Bulgarian, and notes the mutual intelligibility of Czech and Slovak, as well as the potential deliberate distancing or coalescing of Serb and Croat, Russian and Ukrainian, and Danish and Norwegian.

Gerrit J. **DIMMENDAAL**.

Notes, p361, that Tirma-Chai (mutually intelligible) are in a dialect cluster with Mursi.

Robert M.W. **DIXON**.

Describes a continuum encircling but not including Mbabaram, comprising Agwamin, Dyangun, Muluridyi, Dyabugay, Yidin, Ŋadyan, Mamu, Dyirbal, Giramay, and Waruŋu, with the first and last somewhat distant. [An accompanying map confirms the Ethnologue correspondence, despite Ethnologue's genetic classifications.]

F.A. **DOLPHYNE**.

Describes, p53, Bron and Wasa as dialects of an Akan language, and says that Bron is "to a large extent, mutually intelligible" with Fante, Asante, and Twi. On p54, though, describes Fante and Bron as extremes of a continuum, with low intelligibility.

Louis-Jacques **DORAIS**.

Notes from the first page that all of Inuktitut is a dialect continuum, with fourteen to eighteen dialects in four groups.

Harold E. **DRIVER**. Review of George L. Trager and Felicia E. Harben.

Driver states that "Eskimo speech from Alaska to Greenland and Labrador" are all dialects of a single language, and that Panamint, Gosiute, Shoshoni, and Comanche are mutually intelligible.

Isidore **DYEN**.

Dyen concludes based on cognacies well above 90% that Navajo, Mescalero, Chiricahua, San Carlos, Lipan, and Jicarilla are or were mutually intelligible, and existed in a dialect chain, p367.

William W. **ELMENDORF**.

Notes, p65, that Spokane, Chewelah, Kalispel, Pend d'Oreille, and Flathead are mutually intelligible.

E. Nolue **EMANANJO**.

Refers, p45, to the following Igbo "dialects": Ohuhu, Owere, Olu, Ibbouzo, Onicha, Izii, Ika, Ikwere, Mbaise. Attributes to "outsiders" the notion of Igbo "languages", to insiders "one language (continuum) with a number of mutually intelligible dialects", p46.

Jack **FELLMAN**.

Divides Gurage into three groups, each internally mutually intelligible: Northern (Soddo, Goggot), Eastern (Selti, Wolane, Zway), and Western (Muher, Masqän, Chaha, Ezha, Ennemor, Endegeň, Gyeto). Also notes that the three interact and have become closer; and that "the Northern Gurage are all Christians, the Eastern Gurage are almost all Muslims, and the Western Gurage are mostly pagans."

William N. **FENTON**.

Using C.F. Voegelin's work (and the continuum standard), groups Ojibwa, Ottawa, and Algonkin; Sauk, Fox, and Kickapoo; Miami, Wea, Piankashaw, Peoria, and Illinois; and the Five Nations Iroquois varieties (p497).

K.C. **FORD**.

States, p133, that Tetrugbu and Tɛgbɔ are mutually intelligible with Siya.

George M. **FOSTER**. Review of Ralph L. Beals.

Notes at the beginning that the Yaqui and Mayo comprise the Cáhita and speak mutually intelligible varieties.

Andrew **FOX**. Review of Alan S. Kaye.

States that Juba Arabic and Ki-Nubi are mutually intelligible, perhaps based on Kaye's field work.

Andrew **FREEMAN**.

Freeman (PhD, University of Michigan, 2002) states on personal website that the vernaculars "are mostly mutually intelligible with the exception that the Maghrebi dialects are generally unintelligible outside of the Maghreb".

Victoria **FROMKIN** and Robert **RODMAN**.

A footnote to a table, p327-9, notes that several "languages ... which are close enough to be considered dialects, are nonetheless considered as separate languages out of political considerations", and cites Dutch and Flemish, Norwegian and Danish, Hindi and Urdu, Malay and Indonesian, and Thai and Lao. The table lists a single Serbo-Croatian, and states that Persian is spoken in Iran and Afghanistan.

Patricia **GALLOWAY**. Review of Daniel H. Usner, jr.

Galloway notes on her own accord the mutual intelligibility of Choctaw, Chickasaw, and Alabama.

Jack **GOODY**. Review of Charles Duvelle.

States that the languages of the Dagari (or loDagaa) and the Birifor (or loBirifor) of Upper Volta are mutually intelligible.

Gary H. **GOSSEN**. Review of Victoria Reifler Bricker.

Zinacantan, Chamula, and Chenalhó Tzotzil were chosen for Bricker's study because they are mutually intelligible.

John N. **GREEN**. (1990b)

Occitan is treated as a single entity, on par with French, Spanish, and Portuguese. Green notes, p203, that modern Provençal "is properly considered a constituent dialect of Occitan."

Joseph H. **GREENBERG**.

States, p81, that Tagoy, Tumele, and Tegele from the Kordofan are "similar, probably to the point of mutual intelligibility".

Edgar A. **GREGERSEN**.

States, p130, that Malagasy is a single language with "several dialects all quite similar and mutually intelligible".

George **GRIERSON**.

Grierson lays out in great detail the continuum that exists among the Indo-Aryan dialects. He divides the dialects into three groups, the Midland, the Outer, and those Intermediate to the two; the last is further divided by closeness to the Midland or to the Outer, p48-9. The Midland consists of Hindī; the near Intermediate of Panjābī, Rājasthānī (including Khāndēśī), Gujarātī (including the Bhīl dialects), Eastern Pahārī (Naipālī), Central Pahārī, and Western Pahārī; the far Intermediate of Eastern Hindī; the Outer of Lahndā and Sindhī (North-Western), Marāthī (Southern), and Bihārī, Oriyā, Bengali, and Assamese (Eastern). He then lists the Dardic or Modern Piśāca dialects in Western, Central, and Eastern groups. He notes, p50, that the Midland dialect (Hindī) belongs to the Madhyadēśa, the Outer dialects surrounding it to the west, south, and north, with the Intermediate dialects "representing the latter shading off into the former. There is no hard and fast geographical frontier between each language", because absent physical boundaries, related dialects "insensibly merge into each other." He then notes the example of Panjābī and Lahndā. He describes, p51-3, the relationship of Hindī as a whole to its variants Hindōstānī, Urdū, and finally Bāngarū (Hariānī), Braj Bhākhā, Kanaujī, and Bundēlī. Bāngarū is "partly Hindī, partly Panjābī, and partly Rājasthānī". Grierson describes, p54, Panjābī as essentially a transition from Hindī to Lahndā, and notes also the presence of Dardic features and influence in the north-western Outer dialects, extending even into Panjābī, weakening as Hindī influence becomes stronger. He describes Dōgrī of Jammū as a dialect of standard Panjābī, p55. He describes Hindī transitioning outward into Rājasthānī and thence to Gujarātī, the latter two "in fact little more than variant dialects of one and the same language", p56. Rājasthānī has four dialect groups: Mēwātī (northern), Mālvī (south-eastern), Mārwārī (western), and Jaipurī (east-central). In a footnote he points out that the distinction between Mārwārī in particular and Gujarātī is a recent innovation. He notes, p58, similarities between eastern Rājasthānī (Jaipurī) and Central Pahārī, between western Rājasthānī (Mārwārī) and Western Pahārī, and between northern Lahndā (west of Western Pahārī) with Gujarātī. He notes, p60, that Kumaunī and Garhwālī are dialects of Central Pahārī. He describes, p64, Eastern Hindī as "a fairly uniform language" transitional from Midland to Outer, consisting of three dialects, Awadhī, Baghēlī, and Chattīsgarhī, the first two of which "hardly differ, and form practically one dialect". He identifies, p66, four dialects of Lahndā — central; southern (Mūltānī); north-eastern (Pōthwārī); north-western (Dhannī) — and "five recognized dialects" of Sindhī — Vicōlī; Siraikī; Lārī; Tharēlī; Kacchī. He states, p67, that Siraikī is a form of Vicōlī, and that Tharēlī and Kacchī are mixed forms, shading into Mārwārī and Gujarātī respectively. He notes, p68, that an eastern variety of Marāthī merges into the Bhatrī dialect of Oriyā and resembles Chattīsgarhī, but does not merge on its northern border with Gujarātī, Rājasthānī, and Hindī. Marāthī has three dialects: Dēśī Marāthī (including two varieties often called 'Kōnkanī'), Kōnkanī, and that of Berar and the Central Provinces. He describes, p69, Bihārī as having three dialects, Maithilī, Magahī, and Bhojpurī. He states, p71, that Oriyā varies only slightly and "has no recognized dialectic forms", excepting the aforementioned Bhatrī, and that Bengali

has a heavily Sanskritized standard with three main colloquial varieties, western, northern, and eastern. He states, p72, that the dialect of Chittagong has changed in pronunciation so much that it is "almost a new language", and that Assamese has "no true dialects". Grierson places, p74, the Piśāca dialects as intermediate between Indo-Aryan and Eranian. He refers, p78, to Baltī as a dialect of Tibetan. Grierson's ensuing discussion of Piśāca dialects mostly names as languages the language groups from Ethnologue, but his position is not clear.

P.H. **GULLIVER**.

States, p1, that the following are mutually intelligible: Teso, Karamajong, Jie, Dodoth, Turkana, Toposa, Jiye, Donyiro (Ɗiaŋatom).

Joseph **GULSOY**.

Reports, but does not endorse, the position of some scholars that Catalan is a dialect of Occitan, p191.

John J. **GUMPERZ**. (1957)

Confirms intelligibility of Hindi and Urdu, and the continuum of north Indian dialects "from Sindh to Assam".

————. (1961)

Contains background to dialectology and continuity, including the concepts of focal areas and transition zones.

John B. **JENSEN**.

Concludes after listening tests that Spanish and Portuguese are "50% to 60%" mutually intelligible, and confirms the asymmetric intelligibility, with lusophones better able to understand Spanish.

John **HAJEK** and John **BOWDEN**.

The authors state, p222, that speakers of Waimoa report it to be mutually intelligible with Kairui-Midiki; they also cite Geoffrey Hull including Naueti in that group.

E.A. **HAMMEL**.

Notes, p7, the dialect continuum of *all* Slavic dialects in Yugoslavia, and the fact that members of one of the sects are often closer in dialect to those of other sects than others of their own sect.

Eric P. **HAMP**.

Notes that the authors conclude that "all of Toba comprises 2 major but mutually intelligible dialects: Toba and Pilagá".

Kevin **HANNAN**.

Hannan quotes Óndra Łysohorsky describing Lachian as a transitional dialect between Czech, Slovak, and Polish, p726; Hannan himself states that Lachin lies at the middle of a continuum of Czech, Slovak, and Polish, p730.

Martin **HARRIS**.

"The division between north and south is so marked that it has frequently been argued that, on purely linguistic grounds, the dialects of the south, now generally known collectively as *occitan*, are best not regarded as Gallo-Romance at all, but rather as closely linked with Catalan...." (p211)

Einar **HAUGEN**.

Haugen describes in some detail (e.g. p157, p161) the exact nature of mutual intelligibility among the dialects. Haugen rejects grouping them as one "language", but only because to do so "would neglect those aspects that are not purely linguistic, but are also social and political." The implication throughout is that Danish, Swedish, Bokmål, and Nynorsk are highly mutually intelligible. The dialects of Jutland, Dalecarlia, and

Setesdal are "partly or wholly unintelligible" to the dialects of the respective capitals, p162.

John A. **HAWKINS**.

Describes, p110-4, the continuum that exists among "Low", "Central", and "Upper" German based on sound shifts (Central and Upper comprising "High" German), in fact breaking the continuum down into seven, not two or three, parts, and grouping the Low German extreme with Dutch, Frisian, and English.

Bernd **HEINE**.

Considers 'Munukutuba' another name for Kituba, as used in Congo-Brazza; Kituba "forms a dialect of" Kikongo (p67 on).

Ronald S. **HIMES**.

States, p277, that "Atta of Cagayan province is mutually intelligible with Ibanag, and the Halità dialect of Ayta is mutually intelligible with Sambal of Botolan, Zambales."

Erhard **HINRICHS**, Dale **GERDEMANN**, and John **NERBONNE**. 'Measuring linguistic unity and diversity in Europe'. Study proposal, Eberhard-Karls Universität Tübingen.

The authors note the dialect continuum that exists between Serbo-Croatian, Macedonian, and Bulgarian, and the similarities between Macedonian and western Bulgarian dialects. (Web version http://www.sfs.uni-tuebingen.de/dialectometry/docs/VW-dialect-proposal.pdf).

John **HOLM**.

States, p303-4, that Gullah and Bahamian are dialects of a single Atlantic Creole English, and that all the Atlantic English creoles are mutually intelligible except those of Suriname. Holm cites Edward Bendix terming the creoles a continuum.

Thomas John **HUDAK**.

Hudak presents 'Lao' and 'Northeastern Thai' as synonyms, p759.

Larry M. **HYMAN**. (2003a)

A footnote, p25, notes that Sukuma and Nyamwezi are mutually intelligible.

————. (2003b)

Hyman notes that Nyambo is mutually intelligible with Haya, p26.

Kumiko **ICHIHASHI-NAKAYAMA**, Yukihiro **YUMITANI**, and Akira Y. **YAMAMOTO**.

Describes Keres as an isolate with several mutually-intelligible dialects, p463.

Grigory **IOFFE**.

Primarily discusses the relationship between Belarusian and Russian in Belarus. Describes the prominence of Russian and of 'trasyanka', a Belarusified Russian dialect. Notes, p1026, that standard Belarusian originated from a western variety transitional to Polish, while eastern and southern dialects are similar to Russian or Ukrainian. He specifically describes the Polish-Belarusian-Russian continuum, p1038.

Michael **JACKSON**.

Notes, p398, that Kuranko is a Maninka dialect, "inter-intelligible with Malinke and Susu, and to a more limited extent with Bambara and Yalunka."

Deborah **JAMES**, Sandra **CLARKE**, Marguerite **MACKENZIE**.

The authors describe Cree, Montagnais, and Naskapi as a dialect continuum from the Rockies to the Atlantic coast, p230.

Aimee **JOHANSEN**.

Describes Comorian as one language, the island varieties as dialects.

Yamuna **KACHRU**.

Kachru initially describes Hindi and Urdu as separate "languages", but generally discusses them together as Hindi-Urdu, seldom distinguishing between them.

Nkonko M. **KAMWANGAMALU**.

States explicitly, p194, that "Lamba is a dialect of Bemba"; implies also (e.g., p191) that Lima and Lala are similarly associated with Bemba.

Gregory H. **KAMWENDO**.

Notes, p143, that Chitonga has a "high degree of mutual intelligibility" with Chitumbuka, and notes at the same time that early missionary activity reinforced the notion that dialects were separate languages.

James M. **KARI**.

States, p288, that, although Tanaina and Ahtna are not mutually intelligible, there is no clear boundary and the two exist on a continuum.

Edrinnie **KAYAMBAZINTHU**.

Khokhola and Lomwe are mutually intelligible, p370. Lambya and Nyiha are mutually intelligible, p375.

Alan S. **KAYE**. Review of Sarah G. Thomason.

Juba Arabic and Ki-Nubi are mutually intelligible, and dialects of Arabic, p379.

Raymond K. **KENT**.

"Although there are numerous local variations of Malagasy, they are all mutually intelligible." (p8)

Kendall A. **KING**. Review of Gary Urton.

Notes that Urton found Southern Peruvian and Bolivian Quechua (both of the southern sub-branch of Peripheral Quechua) to be mutually intelligible. This refers to work in Pacariqtambo in Cusco department [quz] and Sucre in Bolivia [quh].

Jaklin **KORNFILT**.

Kornfilt describes, p619-20, the Turkic dialects as "very close to one another", and notes that they form a continuum, specifically and only excluding Chuvash.

D.E.K. **KRAMPAH** and J. **GYEKYE-ABOAGYE**.

"Nzema is intelligible to all the speakers of Ahanta, and Agni (Aowin) in the Baule and Sefwi areas; Akan is bringing together the three relative dialects of Akuapem, Asante and Fante", and later "Akan is the name for a group of closely related dialects, Akuapem, Asante and Fante". (p80)

Mary Esther **KROPP DAKUBU**.

Calls, p121, Nyangbo and Tafi mutually intelligible.

Peter **LADEFOGED**, Ruth **GLICK**, and Clive **CRIPER**.

They note, p17, that, absent political considerations, Luganda and Lusoga would be "very different dialects of the same language", and that Runyankore and Rukiga can be grouped together, as can Runyoro and Rutooro (all four of which are shown by example to be mutually intelligible, p21). Lango, Acholi, and Alur "are often considered variants of a single language", p18. Note, p32, that Ugandan Bantu speech tends to be in continuum. Ugandan Bantu languages are in continuum; by previous standard, Luganda, Lusoga, and Lukenyi are the same language. (p68-9) Describe continuum again, p72, referring back to figure listing members: Runyarwanda, Rukiga, Ruhororo, Runyankore, Rutagwenda, Rutooro, Runyoro, Lubwisi, Rugungu, Luganda, Lusoga, Lukenyi, Lunyole, Lugwere, Lugwe, Lusamia, and Lumasaba; Luhya languages in Kenya are included as well. Note, p79, that Sudanic languages are apparently in continuum, specifically mentioning Lugbara (Aringa) and Madi (Ogoko). Kuman, Dhopadola, and Jonam are also dialects of Lwo/Acholi, p143-4.

Julieta **LANGA** and Sertorio **CHAMBALE-MSHOTHOLA**.

Note, p213, that Cishona and Emakhuwa are dialect continua. List languages and their associated dialects, p214-6, with Kimwani under Kiswahili, Cimwera and Cimakwe under Ciyao, Esaaka, Emarevoni, Elomwe, Emetto, Echirima under Emakhuwa, Marendje under Echuwabo. 'Shimakonde' is listed independently and as a dialect of Ciyao.

Yolanda **LASTRA**.

Citing Lucy Briggs, Lastra states, p247, that Aymara is not a family but "a single language subdivided into mutually intelligible varieties".

Charles N. **LI** and Sandra **THOMPSON**.

While the authors break Mandarin into five parts, and Wu into two, they break Min into only two, Northern and Southern; the map, p812, shows Northern Min subsuming the 'Ethnologue' areas for Min Zhong, Min Bei, Min Dong, and Pu Xian Chinese.

Frank B. **LIVINGSTONE**.

States that Keiagana and Kanite are mutually intelligible, p541.

Armando Jorge **LOPES**.

Describes languages and "variants", p150: Emakhuwa (Emetto, Esaaka, Echirima), Cisena (Gorongoza, Cibalke, Tonga, Phodzo, Mayindu [?]), Xichangana (Xibila [?], Xidzonga), Elomwe (Cingulu), Echuwabo (Marendje), Cishona (Cindau, Citewe, Cimanyika, Citawara, Cidanda, Cimashanga, Cizezeru), Xironga (Konde), Cinyanja (Cicewa, Maganja), Cinyungwe (Cikunda), Cicopi (Cilengue), Ciyao (Jawa), Shimakonde (Shimakwe, Shindonde), Kiswahili (Mgao)

Robert H. **LOWIE**.

States, p234, that Arapaho and Gros Ventre are mutually intelligible.

Grant H. **LUNDBERG**.

The web version notes (as does the title) that Kajkavian Croatian is in continuum with Slovene.

William E.W. **MACKINLAY**.

Describes, p215, the Visaya language, with mutually-intelligible "districts", Cebuano, Boholano, Panayano, Halay, and Halagueina; it is "... spoken on the islands of Panay, Bohol, Cebú, Leyte, Masbate, Ticao, Romblon, Samar, and the districts of Butuan, Dapitan, Davao, Mati, Misámis, and Surigao in Mindanao, as well as in a part of the island of Mindoro." He also describes Bicol as unitary over its entire range. He describes, p216, Calamiano as a dialect of Tagbanua of Palawan.

D.N. **MACKENZIE**

Speaks throughout of a single Pashto, with slight pronunciation differences, spoken in Afghanistan and Pakistan.

Lynell **MARCHESE**.

States, p7: "Within the Guéré complex, there are thirty-five dialects which appear to constitute a dialect chain. Neighboring dialects on the chain understand each other…."

Oleg A. **MASLENIKOV**. Review of Leonid Bilec'kyj: 'Omeljan Ohonovs'kyj'.

Maslenikov notes in the review that Ohonovs'kyj classified Belarusian and Ruthenian as dialects of Ukrainian. Maslenikov himself states that Russian and Ukrainian are mutually intelligible (citing N.S. Trubetzkoy and others), and that Belarusian is closer to Russian than it is to Ukrainian using a criterion of Ohonovs'kyj.

Yaron **MATRAS**.

States, p37: "Romani dialects form a continuum across Europe, with neighbouring dialects tending on the whole to be quite similar to one another."

Robert **MAULE**. Review of Constance M. Wilson and Lucien M. Hanks.
States, p536, that Muang (Yuan or northern Thai) and Shan (Tai Yai) are mutually intelligible in speech and writing.

Alexander **MAXWELL**.
Asserts, p131-2, that Chinese and Slavic are dialect continua.

Michael **MOERMAN**.
In a footnote, p1226, offers his own judgement that Lue, Lao, Yuan, and Yong are mutually intelligible, and suggests possible intelligibility with (Central) Thai.

Al. D. **MTENJE** and Gregory H. **KAMWENDO**.
List Cilomwe dialects, p128: Chimihavani, Chikokhola, Chithakwani, Maratha, Marevoni, Chinamarohe, Marenje, Manyawa, Chishirima, Chimihekani, Meeto, Emilekani, Chimalokotera, Chimalere, Chimaoni, Chimakukhu, Chimwinyamwero, Chimuhipiti, Chimakua, and Chimihito.

Lazarus **MITI**.
Throughout, classifies Cicewa, Cinsenga, and Cingoni as varieties of Cinyanja, and generally refers to them as one, while breaking them out phonologically.

T. **MSIMANG**.
(Union) Shona incorporated Karanga, Zezuru, Manyika, Korekore, and Ndau (but not Kalanga, "separated from the main group"), p166.

Paul **NEWMAN**.
A table, p706, links Deno with Kubi, Higi with Kapsiki, Daba with Kola and Musgoi, and Gabri with Tobanga.

Eugene A. **NIDA** and Harold W. **FEHDERAU**.
The authors state that the Swahili of Congo and rural Tanzania are mutually intelligible, and "standard Swahili" speakers recognize Congolese as their own language, albeit with dialect differences.

B.G.V. **NYOMBE**.
Lists, p130-2, thirteen groups that could be served by a single standard: Dinka (Nuer, Gajak, Anuak, Jur-bel), Dholuo (Acholi, Shilluk, Lango, Kumam, Dhophadola [sic], Alur), Bari (Mundari, Pajulu, Kuku, Nyangwara, Kakwa, Lopit, Koriok, Lopit, Lokoya, Lango), Lothuho (Logir, Logiri, Lomya, Dongotono, Lorwana, Dodos, Sebei), Teso (Toposa, Turkana, Karimojong, Pori, Jeyi), Massai (Samburu, Camus), Ongamo, Nandi (Gisamajanga, Isimijega, Rotigenga), Sebei (Kipsigis, Elegeyo, Tugen, Marakwet), Dorobo (Kony, Pok, Ng'oma, Nyago'ri), Pokot and related groups, Omotik, Datooga (Bajuta, Barabaiga, Buradiga, Bianjida). States, p133, that Bari, Pojulu, Kuku, Kakwa, Nyangwara, and Mundari are mutually intelligible; explicitly states, p135, that Teso-group dialects are mutually intelligible. Groups Omotik with Datooga, p136.

Geoffrey N. **O'GRADY**, Carl F. **VOEGELIN**, and Florence M. **VOEGELIN**.
Group Ungarinyin and Wilawila; Bagu and Gwini; and Nyulnyul, Bardi, Djaberdjaber, Nimambur, Djaui, and Djugun, p35. Group Kurama and Jindjibandi, p36. List all the Wati group varieties as one language, except Wanman, p38. Group Gubabuyngu, Gomaidj, and Djabu, p55.

James S. **OLSON**.
Discusses, p240, Mongolian as having "dozens of mutually intelligible dialects", including Inner and Outer Mongolia. In the latter, he specifically includes Oirat and later Khalkha, Barga (Bargu), and Buryat. Also says "All of the dialects spoken in Xinjiang, Qinghai, and IMAR are mutually intelligible.

Kenneth S. **OLSON**.

Attributes, p16, the notion of a Gur-Adamawa-Ubangi continuum to Bennett and Sterk.

Martin **OTTENHEIMER** and Harriet **OTTENHEIMER**.

"[S]ome *wangazija* who have learned Swahili believe that their language may be a dialect of KiSwahili and thus call it KiNgazija" (p183), though the authors disagree with this (native) assessment.

Jeremy **PALMER**.

Palmer quotes Janet C.E. Watson saying "Dialects of Arabic form a roughly continuous spectrum of variation, with the dialects spoken in the eastern and western extremes of the Arab-speaking world being mutually unintelligible", p113.

Gary J. **PARKER**.

States, p82, that intelligibility exists between Southeast Ambrym and Paama, and they should be considered one language.

David J. **PARKIN**.

Parkin states, p271, that Luo, Acholi, Lango, and Alur "are more or less mutually intelligible".

J.R. **PAYNE**.

Payne mentions and maps Persian, Dari, and Tajiki separately, but calls the South-West Iranian group to which they belong "close-knit"; on the other hand, he writes of Kurdish and Balochi as single languages throughout, and maps them as such.

Ralph **PENNY**.

Using a detailed discussion on dialect continuity, Penny lays out a continuum that connects all Iberian Romance along the northern end of the peninsula, while noting distinct (and atypical for Romance) discontinuity in the south. He also notes that all of contiguous western Romance is continuous.

Jean Treloggen **PETERSON**.

States, p338, that Agta and Palanan are mutually intelligible, referring to Thomas N. Headland and Janet D. Headland, 'A Dumagat (Casiguran)-English dictionary', Pacific Linguistic Series n28, Department of Linguistics, Research School of Pacific Studies, the Australian National University, Canberra. 10,000 farmers along the Palanan and Disukad rivers, and adjacent coastal strips (Palanan); 800 negritos (Agta to themselves, Dumagat or Aeta to others).

Kenneth L. **PIKE**.

The author (of SIL) states that the Mixtec of San Esteban and San Miguel el Grande are mutually intelligible.

Rebecca **POSNER** and Marius **SALA**.

The authors note, p4, that "all neighboring dialects of Italy are mutually intelligible", specifically with reference to Sicilian and central and northern Italian. Describe Walloon and Picard as dialects of French, p5. They flatly describe Galician as the northern dialect of Portuguese, and suggest continuation with Spanish, p7. Corsican is described as a Tuscan dialect, and the continuum claim is repeated, p8. Note that Aromanian (or Macedo-Romanian) is a dialect of Romanian, though perhaps "barely mutually intelligible", p9. The authors state, p10, that the dialects of Occitan are "more or less mutually intelligible", while noting that Gascon is "less readily comprehensible than Catalan" for other Occitan speakers. They describe, p12, Catalan as having grown closer to Castilian and Aragonese, though once having been virtually identical to Lemosí. Discuss, p13, the closeness of northern Sardinian dialects with Corsican. Present but do not judge the theory that either Ladin or Friulian is a dialect of Venetian, p14.

Kwesi Kwaa **PRAH**. (1995)

Discussing Mozambique, p41, speaks of a single "Makhuwa (including E-Lomuwe and E-Chuwabu)", "Tsonga (including Xi-Tswa, Xi-Shangaan, and Xi-Ronga)", and "Chy-Nyanja (including Chi-Sena)". Lists many intelligibility clusters, p82: Luo (Jur, Anyuak, Shilluk, Acholi, Langi, Alur, Chopadholla, Luo); Kikuyu, Embu, Meru, Akamba; Bari (Mondari, Bari Nyangbara, Fajelu, Kakwa, Kuku); Akan (Ashanti, Fanti, Agona, Kwahu, Akim, Akuapim, Nzema, Ahanta, Gomua, Edina); Teso, Kumam [sic], Karamojong, Dodos, Jie, Turkana, Toposa, Donyiro; Nguni (Nyamwezi [?], Shangaan, Swati, Kangwane, Zulu, Xhosa, Ndebele); Sotho-Tswana (Tswana, Lozi, Sotho, Pedi); Inter-lacustrine Bantu (Nyoro, Toro, Haya, Ganda, Ankole, Rwanda). "Borana and Oromo are literally the same. … Maasai and Samburu are equally close."

————. (1998)

Prah takes Kamwangamalu's conclusions further, explicitly including Lamba, Lima, Lala, and Swaka as mutually intelligible with Bemba.

D.J. **PRENTICE**.

Throughout, Prentice clearly treats the official dialects of the states of Indonesia, Malaysia, and Brunei and the co-official dialect of Singapore as a single dialect, Malay. These official dialects correspond to distinct members of 'Local Malay' in 'Ethnologue'. Prentice notes, p915, that Minangkabau is "regarded by many as a dialect of Malay". A map, p914, shows areas in five states (also including Thailand) in peninsular Malaya and the Malay archipelago where Malay is a native dialect, and shows point locations for Malay creoles. The 'Ethnologue' map of local Malay "languages" is actually *smaller* than Prentice's map.

R. David **PRICE** and Cecil E. **COOK** jr.

The authors divide Nambiquara, while noting that neighboring dialects are generally mutually intelligible. Sabanê, they note, is not.

Ernst **PULGRAM**. Review of Max Leopold Wagner.

In a discussion of language and dialect distinctions, p290, Pulgram supports treating Sardinian varieties as dialects, but a separate language from any other.

Douglas **PULLEYBLANK**. (1990a)

Pulleyblank treats Fulfulde (e.g., p963) as a single entity. He also notes that it is closely related to Serer and Wolof. "Maninka-Bambara-Dyula refers to a group of very closely related dialects/languages spoken in several countries including Senegal, Gambia, Guinea, Mali, Sierra Leone, Ivory Coast and Bourkina Fasso", p964. He links Susu with Yalunka, and Dan with Kweni, p964. He links Suppire [spp] with Mianka [myk], and describes Dagara as a single language spoken in both Ghana and Burkina, p965. He links Gã with Adangme, p966.

————. (1990b)

Pulleyblank describes, p971, Yoruba as spoken, outside of Nigeria, "in southeastern sections of the Republic of Benin, as well as certain sections of Togo."

Robert L. **RANKIN**. Review of Wallace L. Chafe.

States that Chafe classifies "the dialect continuum comprising the languages of the five nations" as a subgroup of Northern Iroquoian.

K.E. **ROEHL**.

Roehl notes, p191-2, that there is little variation in the language area that includes the states of Ruanda, Urundi, and Uha; that the three form an "indestructible" linguistic unit. He speculates, p192-4, that Luganda will assimilate Toro, Nyoro, and Nkole, and the Bantu dialects east of Lake Victoria, and influence Ziba, Haya, and Nyambo, among

others. States, p193, that the Haya, Ziba, and Nyambo "speak one language", and that the Sukuma and Sumbwa "speak the same language as the Nyamwezi". Notes, p194, that Kikuyu and its "kindred dialects", including Kamba, could be "united into one literary language". Swahili, he notes, was spoken over 3000 miles of coastline from Mozambique to Somaliland. He describes, p198, the Swahili area as a continuum from coast to inland.

Willard Hughes **ROLLINGS**. Review of Garrick A. Bailey, 'The Osage and the invisible world of Francis La Flesche'.

La Flesche was an Omaha; it is stated that he could communicate in Osage because the two are mutually intelligible.

William J. **SAMARIN**. (1958)

Samarin states, p149: "The dialects of the Suma, Gbɛya, and Gbaya of Bozoum are mutually intelligible." A footnote refers to Gbanu as a dialect of Gbaya.

————. (1991)

States, p166, that Sango, Yakoma, Ngbandi, and Dendi are mutually-intelligible, closely-related dialects.

Mahir **SAUL**.

Showalter (of SIL) groups Dogosé and Khisa as one language, Kaansa and Kpatogo as another, but the review makes clear that the four are all close and Showalter was applying extralinguistic factors.

Thilo C. **SCHADEBERG**.

"The conclusion has to be that Bantu languages have the remarkable ability to act much more like a dialect continuum than as discrete and impermeable languages." (p158)

David Leedom **SHAUL**.

Notes, p415, that all of Shoshone "from Nevada through Utah, Idaho, and Wyoming, to the easternmost Comanche groups, was mutually intelligible", and exemplifies a dialect continuum.

Jan Bender **SHETLER**.

States, p414, that Ikizu, Sizaki, Ishenyi, Nata, Ikoma, and Ngoreme are mutually intelligible.

David **SHORT**.

Short calls Czech and Slovak separate "languages", but notes, p367-8, that they are "on average 90 per cent mutually intelligible", and that "similarities are highest, and increasing, at the lexical level". Side-by-side comparisons throughout the chapter reveal few differences.

William A. **SMALLEY**.

States, p218, that Srê and Maa are mutually intelligible.

Robert F. **SPENCER**. Review of Carl-Martin Edsman, ed.

Spencer states that "Santali and Birhori (if such a distinction is even valid) are mutually intelligible".

David L. **STAMPE**.

States, p79-80, that Ho is mutually intelligible with Mundari.

Gerald **STONE**.

Stone notes, p348, that Polish is the only surviving Lechitic dialect, and states that "Cassubian ... is now generally regarded as a dialect of Polish."

David **STRECKER**.

Strecker notes, p749: "Lao dialects in Thailand are also called 'Northeastern Thai' "; the classification of Northeastern Thai is otherwise excluded. On the same page, he describes Bouyei (Buyi) and Zhuang as a dialect continuum.

Elizabeth **TOLBERT**.

States, p82, that Karelian and Finnish are "for the most part mutually intelligible".

A.N. **TUCKER**.

Notes, p868, that Keliko and Logo are "on the whole mutually understandable", and that Lugbara (or Lugwara), Madi (or Ma'di) and Lulu'bö are "mutually understandable to a fairly high degree". He states, p871, that the Ndogo-Bviri group "consists of four dialects, so closely allied as to be mutually intelligible": Ndogo, Sere (Basiri), Bai, and Bviri (Belanda). He groups, p869-70, Morokodo and Ma'di (different from the above, but both [mgc]), and then groups Biti [mgc], Wira [bex], and Mä'du [mgc]; he also groups Lori and Lali (both [bex]), and 'Beli and Sofi (both [blm]). He describes, p872-3, the Pambia, Barambo, Huma, and Bukuru as groups conquered and assimilated by the Zande, all speaking Zande. He states, p876, that all Dinka dialects are mutually intelligible, though he doubts the emergence of a single standard. He states, p879, that Shilluk (Dho Cɔlo) is mutually intelligible with Anuak (Anyua). He states, p885-6, that all of Bari (Bari proper, Pöjulu/Fajelu, Kakwa, Kuku, Nyepu/Nyefu, Nyangwara, Mondari/Mandari, and Shir) is "so closely related as to be mutually understandable". He lists, p886-7, the Lotuko languages (Latuko/Torit, Lokoiya, Koriuk, Lapit/Lofit, Dongotono, and Lango) and notes that they are mutually intelligible "with the exception perhaps of one or two Lango dialects". He notes, p888, that Topotha, Turkana, and Karamojong are "so much alike as to be almost identical". Lists, p890, Nandi proper, Kipsigis ("Lumbwa"), Buret, Sotik, Elgonyi, Elgeyu, Kamasia ("Tuken"), and Mutei, as "so closely related as to be regarded as dialects"; Suk (Pokwut) is "almost a dialect of Nandi", according to Beech. He states, p893, that Didinga, Longarim, and "Beir" (Murle) are mutually understandable, with the latter two more alike.

J. **VANSINA**.

Vansina states, p186, that "Bantu languages do form a huge dialect continuum", after an analysis of Swadesh data.

Siddheshwar **VARMA**.

Disputes, p2-3, Grierson's classification of Lahndā and Pañjābī as separate, and Hindī, Bihārī, and Rājasthānī as separate, on grounds of continuum. Notes, p104, that, on linguistic grounds, Assamese "is a dialect of Bengali". Lists, p110, dialects of Khassi — Lyng-ngam, Synteng (Pnār), Wār. States, p121, that Tai languages in Assam should be seen not as languages but "as members of the group of Northern Shan dialects", and lists Khāmti, Tairong [*try*, extinct], Norā [unidentified], and Aitoniā. Describes, p136, three dialect chains between Tibetan and Burmese; in the east, through the Kachin dialects, in the west, through the North Assam group, Nāgā, Bodo, and Kuki-Chin, or the Himalayan dialects, Bodo, and Kuki-Chin. Lists, p137, Baltī, Purik, and Ladakhī as dialects of Tibetan, which range from Spiti to Bhutan. Describes, p141, Purik as a link between Baltī and Ladakhī. Describes, p145, Lahul dialect as a "link between Western and Central Tibetan".

Carl F. **VOEGELIN** and Zellig S. **HARRIS**.

The authors list, p325, as a single language Flathead-Pend d'Oreille-Kalispel-Spokan, citing Teit.

Carl F. **VOEGELIN** and Florence M. **VOEGELIN**. (Indo-Pacific 1, 1964a)

Consider, p87, whether Malagasy is one language or many, and indicates one.

————. (Africa, 1964b)

Repeat, p16-8, Welmers claim that Kru, Bassa, and De are in continuum, state that Bassa, Kru, Krahn, and others are in continuum, Sapo is mutually intelligible with Kru, Grebo, and Bassa; dialects of Bakwe include Hwane, Obwa, Pya (Pye), and Abi (Abriwi, Aulo), and associated tribal names include Plapo, Urepo, Kapo, Bapo. List, p19-20, Bété dialects and associated tribal names, including Bété, Dida, Kwaya, Godye (Godia), Neyo, Kwadya, and Bobwa. List, p26, a single Guang language, with dialects including Nawuri, Atyoti, Anyanga, Ncumuru, Krachi, Nkunya, Nkami, Anum, Boso, Late, Afutu, Gomoa, and Brong; associated tribal names include Basa (Ayesegn), Chimboro (Agnamkpase, Cangborong, Nchumbulung, Nchumuru, Tchangbore, Tchimboro), Nta (Bole, Bore, Daboya, Inta) and Chumbuli (Bassen, Tchummbuli). State, p31-2, that there are three Yoruboid languages, with two of them being Igala [igl] and Igbara [igb] (reclassified in E.); all others are dialects of Yoruba. List, p34, Nupe and its dialects, including Ebe (Abewa), Dibo (Ganagana), Kupa (Kupanchi, Gupa), and Kakanda (Akanda), while noting that the last may be separate. Note, p46-7, Tucker's and Bryan's claim that Gbaya-Manja-Ngbaka varieties are all dialects, listing them all by name. List, p48, Banda as a single language, with its dialects. Note, p49-51, Tucker's and Brian's claim that Yakoma is a dialect of Ngbandi (also including Dendi), Nzakara, Patri and Dio (Adio, Makaraka) are Zande dialects, and that Bwaka (Ngbaka Mabo, Gwaka) has as dialects Bangba, Mayogo, Mayugo, Majügü, Makyo (Maiko), Dai (Day, Angai), Mangbele, and Bangba (Abangba). Describe, p57-9, Mandinka-Bambara-Jula and the various dialects as one, though ambiguous a continuum. List, p66, Samo (Samogo) as a single language, with Sembla apparently as a dialect. Describe, p69, four Senufo languages, existing as a continuum: Palaka, Dyimini-Tagwana, Central (Senadi, Senari), Northern (Supide/Suppire, Minianka). Note, p75-7, that Westermann and Bryan consider Gurma and the "Tem group" single languages, with numerous dialects, and lists those varieties. List, p78, Nalu as a single language, with Baga Fore (Black Baga) as a possible dialect according to Westermann and Bryan; no other Baga listing is made. Classify, p79, Balante (Balanta) as a single language used in Senegal and Portuguese Guinea. Classify, p80-1, Dyola as a single language, including Bayot, Flup, Bliss, and Fogny. Note, p82-3, Westermann's and Bryan's grouping into dialect clusters: Baga; Kissi, Bulom; Limba. List as dialects of Mbo Bafo, p92-3, Koose, Swase, Loŋ, Nenũ, and Kaa; group Yasa and Kombe (Ngumbi). Group, p95, Njem (Djem, Dzimu, Kozime, Zimu) with Bajue (Badjue); Konabem (Konabembe) with Bekwil; Mbimu with Medjime (-Bagaato), Mpõmpõ (Bombo, Mpiemo-Bidjuki. Group Teke dialects as, p100-1: North (Tege-Kali, Njiniŋi/Njikini/Djikini); Northeast (Ngungwel, Mpũmpũ); West (Tsaayi, Laali, Yaa/Yaka, Kwe); Central (Ndzindziu, Boõ); East (Mosieno, Ðee); South (Kukwa/Kukuya, Fumu). List as dialects of Losengo, p105, Lingala, as well as Poto, Mpesa, Mbudza, Boloki, Kangana, and Leko. List as a dialect of Luhya, p115, Nyala, and as a subdialect, Isu Xa (Idakho, Kakamega); as a dialect of Zazaki, Isenyi. List, p116, three dialects of Caga (Chagga): Hai (Moshi, Machame), Wujo (Marangu), and Rombo; and five dialects of Nyika: Giryama, Kauma, Conyi, Durama, and Rabai. List, p117, two dialects of Taita, Dabida and Sagala (Teri). Map, p118, shows Toro [nix] as part of Toro [ttj]. Include as dialects of Kwangari (Kwangali), p132, Sambyu, Mbogedo (Diriku), and Mbukushu. Include as dialects of Herero, p146, Mbandieru and Cimba (Tjimba, Simba). Classify, p290, Somali as a single language, though acknowledging Pia's assertion that

Digil, Jiddu, Merifle, and Tunni are distinct. Note, p294, that Zaysse is acknowledge to be mutually intelligible with Badittu outside of Ethiopia.

————. (America 1, 1964c)

Presents Nahuatl as a single language, p132.

————. (Indo-Pacific 2, 1964d)

State, p3, that Taku (Tauu), Nukuria, and Nukumanu "are reported to be the same language". Page 4 lists Marquesan as a single language. Describe, p19-20, Zapotec as a single language, or at least a continuum, and Chatino as a single language.

————. (Ibero-Caucasian and pidgin-creole, 1964e)

List, p10, Abkhaz and Abaza as one language with five dialects: Bzyb, Abzhui, Samurzakan, Ashkar/Abaza, and Tapanta/Abaza. Classify, p11, all of Circassian as one language. Note, p13-4, that Ingush is sometimes considered a Chechen dialect. "Botlix (Botlikh) and Godoberi are dialects of one language", p15. Group, p16, Bezhita and Gunzib. Describe, p22, Laz and Mingrelian as dialects of Zan. Describe, p31-2, Basque as a single language, with dialects in Spain and France.

————. (Sino-Tibetan 2, 1965a)

Note, p7-9, that standard Southern Thai is intelligible with Bangkok Thai, differing "largely in tone", and that Yuan or Lanna Thai "is sometimes treated as a northern dialect of the same language as Thai", mention Lü and Tai Blanc (White Tai) as "close dialectal variants", citing Li; Lao dialects are "more or less intelligible" with Thai dialects across the border. Clarify, p13, that the Mak-Sui distinction is social, not linguistic.

————. (Sino-Tibetan 3, 1965b)

State, p4, that Red Miao, White Miao, Green Miao, and Flowery Miao are "probably mutually intelligible to some degree".

————. (America 2, 1965c)

Classify, p3, Tarahumara/Vorohio and Tepehuan as single languages. Classify, p4, Tarascan (Purepecha) as a single language (and isolate). Note, p7-11, that Chontal, Chol, and Chorti are considered to be one language by some specialists, and list, as individual languages within the Mayan family, Huasteco, Tzeltal, Tzotzil, Tojolabal, Chuh, Jacaltec, Kanjobal, Solomec, Motozintleco, Mam, Aguacatec, Ixil, Quiche (including Uspantec), Cakchiquel, Tzutujil, Rabinal (Achi), Kekchi, Pokonchi, Pokomam, Maya proper (Yucatec, Itza, Lacandone, Mopan). Group, p38, Epera (Emperá) into two languages, Southern (Saixa, Baudó, Rio Sucio/Citaró, Tadó, Chamí) and Northern (Dabeiba/Catio, San Jorge/Chimila, Rio Verde, Sambú). Present Quechua as one language, adding Mason's supposition that neighboring dialects at least are always mutually intelligible, p78.

————. (Indo-European, 1965d)

List Galician as a Portuguese dialect, p15. List as dialects of Spanish, p18-9, Asturian, Aragonese, and Ladino; Extramaduran is not even distinguished. List all varieties of eastern Romance as dialects of Rumanian, p37-8. Discuss the German-Dutch continuum and notes that some linguists include Frisian, p49. Classify Frisian as one language with several dialects and subdialects, p78-9. State, p83-4, that, by intelligibility, there are two Scandinavian languages, insular and continental. State that East Slavic is one language, p109. State that speakers of *all* South Slavic varieties can converse with each other, and that South Slavic is one language, p111. Discuss Lusatian as a single language, with Upper and Lower as dialects, p120-1. List Pontic as a dialect of Greek, p167. The "less extreme forms" of Geg and Tosk are mutually intelligible, p178.

————————. (Indo-Pacific 7, 1966a)
List, p26-7, exactly six Khmer-group languages: Khmer; Pär/Por/Pear-Samre; Chong (Shong, Xong, Kui); Angrak/Anskrak/Ansrak-Sauch/Saotch; Stieng; Budeh-Dip.
————————. (Indo-Pacific 8, 1966b)
Note that some specialists consider Malayalam and Tamil dialects of one language, p35.
————————. (1973)
The authors state, p140, that Icelandic and Faroese are mutually intelligible, and Norwegian "has come to share intelligibility (or semi-intelligibility) with Danish and Swedish".
Ida C. **WARD**.
Ward discusses the utility of Efik as a literary language for Ibibio, Oron, Eket, Anaŋ, and Ibeno, p91.
Natalie **WATERSON**. Review of Fred W. Householder Jr. and Mansour Lotfi.
Householder and Lotfi (the latter a native speaker) state that the Tabrizi dialect is intelligible over northern and southern Azerbaijan.
Joseph Yelepuo **WEGRU**.
States, p87-8, that the Dagaaba "speak a continuum of dialects (Dagaare, Waala, Birifor)", and that Nab't and Talni can be considered dialects of Frafra or of Mampruli.
William E. **WELMERS**.
Notes the assertion of T.D.P. Dalby in the work, that Susu and Yalunka are mutually intelligible, as are Kono and Vai, and specifically endorses Dalby's credibility.
Douglas **WERNER**.
Werner states, p8, that Table A (page 10) and Map III (page 11) indicate which dialects near Bemba are 85% correspondent with it, and therefore mutually intelligible. These dialects are Lamba, Lala, Bisa, Anga, Aushi, Luapula, Shila, and Tabwa. (Map III locations confirm 'Ethnologue' matches.)
Lindsay J. **WHALEY**, Lenore A. **GRENOBLE**, and Fengxiang **LI**.
The authors present (and disagree with) the grouping of Vera I. Cincius, who classifies Tungusic as a southern group of Manchu, Goldi (Nanai, Sungari, Ulch, Orok), and Udege (Udege, Oroch), and a northern group of Evenki (northern, southern, eastern/Oroqen, Negidal, Solon) and Even (eastern, western, Arman). On the same page (290) they point out the frequent association of Manchu, Jurchen, and Sibe as a single language. The authors' own conclusions are closer to a continuum.
Julian K. **WHEATLEY**.
Includes Arakanese, Tavoyan, and Intha as dialects of Burmese, albeit with differences, p834.
Douglas R. **WHITE**.
"The Luguru are one of a cluster of closely similar Bantu tribes in eastern Tanzania (including Zingula, Ngulu, Kaguru, Sagara, Vidunda, Kutu, Zaramo, and Kwere). They are distinguished geographically …", p13. Otoro, Heiban, and Laro are mutually intelligible, p39. The Tebu dialects of Kanuric are mutually intelligible, p50.
Kay **WILLIAMSON** and Roger **BLENCH**.
State, p17, "In the case of Gur and Adamawa-Ubangi (Bennett 1983), it has been argued that these form such a [dialect] continuum and a similar situation seems to occur with Kwa and Benue-Congo."

Gernot L. **WINDFUHR**.

Windfuhr treats the Persian dialects of the states of Iran, Afghanistan, and Tajikistan as Persian collectively, rarely distinguishing among them. It is noted, p525, that educated Iranian usage is no longer the standard in Tajikistan, though it is in Afghanistan.

Tshimpaka **YANGA**.

Describes, p177, Kikongo as one language, but in which mutual intelligibility is highest only in proximate dialects, diminishing over space: a continuum.

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States, p41, that Tonga, Ila, Lenje, and Soli "are not mutually unintelligible languages", and that other of the official languages similarly represent central dialects in clusters of intelligibility.

R. David **ZORC**.

Zorc notes, p111-3, that a dialect chain exists in western Bisayan, of which Kuyonon, Aklanon, and Kinaray-a form the non-mutually-intelligible extremes. An "L-simplex" exists among Datagnon, Santa Teresa, Bulalakawnon, Semirara, Pandan, Dispoholnon, Alcantaranon, and Looknon, all mutually intelligible. Kuyonon is intelligible with Datagnon and Semirara, Kinaray-a with Pandan, and Aklanon with Alcantaranon, Looknon, and Dispoholnon. Furthermore, Capiznon links Aklanon with Hiligaynon, Gimaras and other dialects link Kinaray-a with Hiligaynon, and Dispoholnon is intelligible with Romblomanon. He introduces, p114, a table and begins an argument that links to the chain Masbatenyo, Waray, Surigaonon, Naturalis, and Butuanon, with Odionganon and Cebuano being the most distant members. Zorc specifically excludes Tausug from the chain.

SOURCES

This paper relies heavily on organizations that collect and publish information on political events in the world, especially news-gathering organizations. While it would not be remotely possible to credit all of the individual articles or sources, the main collective sources are, alphabetically, the Associated Press, the British Broadcasting Corporation, The Economist, the Europa World Year Book, Facts on File, Freedom House, the New York Times, Newsweek, the Public Broadcasting System, Reuters, and Time. The work of individual reporters was especially valuable and deserves much praise.

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